

# INDIAN ASTRONOMY

# A Source-Book

B.V. Subbarayappa

K.V. Sarma

[illegible]

॥ स्थोत्रांतराणां काश्चापरमदिनमानं ॥ ४५ ॥ इष्टदिनमानं ॥ ४६ ॥ अनयोर्नंतरं ॥ ४७ ॥ स्वयंउद्गाहने ॥ ४८ ॥ हीनं ॥ ४९ ॥ अत्पाह  
नेन ॥ ५० ॥ विहीनाय ॥ ५१ ॥ इष्टां कुच्छाया ॥ ५२ ॥ अत्पाह ॥ ५३ ॥ अनेनयुक्तः ॥ ५४ ॥ अयमाजकः ॥ ५५ ॥ वृष्ट्या ॥  
पूर्णातिनाम ॥ ५६ ॥ नमोदिनमानाहति ॥ ५७ ॥ वृष्ट्या ॥ ५८ ॥ सवर्णितात् ॥ ५९ ॥ कलं गतमष्टिकाः ॥ ६० ॥ मध्याकोनरं वेष्ट्या  
काः ॥ ६१ ॥ अकारो नरेण इष्टपटीसाधनं ॥ ६२ ॥ उद्यापदानि सहितानि नुरंग ॥ ६३ ॥ संस्थे तस्य ह्यदिमं परं मनोविभ  
वतेन ॥ ६४ ॥ वेष्टं ॥ ६५ ॥ वमकरादिषु कर्मदाहो बाणा ॥ ६६ ॥ समे ॥ ६७ ॥ इष्टपुनर्विहीनयुक्तः ॥ ६८ ॥ मित्रिभ्रममाणिष्येयं  
समदिनं ॥ ६९ ॥ स्वर्णितात् ॥ ७० ॥ धारसत्तत्रभा ॥ ७१ ॥ मध्याह्नमात्रमिति दिनं पटीतानेविलोकयेत् ॥ ७२ ॥ इष्टभासुनायः  
मुनि ॥ ७३ ॥ युक्तः ॥ ७४ ॥ अनेनयुक्तः ॥ ७५ ॥ नत्पाह ॥ ७६ ॥ अत्पाह ॥ ७७ ॥ अनेनयुक्तः ॥ ७८ ॥ अत्पाह ॥ ७९ ॥ अत्पाह ॥ ८० ॥ अत्पाह ॥  
उत्पाहः ॥ ८१ ॥ अत्पाह ॥ ८२ ॥ अत्पाह ॥ ८३ ॥ अत्पाह ॥ ८४ ॥ अत्पाह ॥ ८५ ॥ अत्पाह ॥ ८६ ॥ अत्पाह ॥ ८७ ॥ अत्पाह ॥ ८८ ॥ अत्पाह ॥ ८९ ॥ अत्पाह ॥ ९० ॥ अत्पाह ॥  
नाभासाता ॥ ९१ ॥ अत्पाह ॥ ९२ ॥ अत्पाह ॥ ९३ ॥ अत्पाह ॥ ९४ ॥ अत्पाह ॥ ९५ ॥ अत्पाह ॥ ९६ ॥ अत्पाह ॥ ९७ ॥ अत्पाह ॥ ९८ ॥ अत्पाह ॥ ९९ ॥ अत्पाह ॥ १०० ॥ अत्पाह ॥  
वृष्ट्या ॥ १०१ ॥ अत्पाह ॥ १०२ ॥ अत्पाह ॥ १०३ ॥ अत्पाह ॥ १०४ ॥ अत्पाह ॥ १०५ ॥ अत्पाह ॥ १०६ ॥ अत्पाह ॥ १०७ ॥ अत्पाह ॥ १०८ ॥ अत्पाह ॥ १०९ ॥ अत्पाह ॥ ११० ॥ अत्पाह ॥  
भक्तः ॥ १११ ॥ अत्पाह ॥ ११२ ॥ अत्पाह ॥ ११३ ॥ अत्पाह ॥ ११४ ॥ अत्पाह ॥ ११५ ॥ अत्पाह ॥ ११६ ॥ अत्पाह ॥ ११७ ॥ अत्पाह ॥ ११८ ॥ अत्पाह ॥ ११९ ॥ अत्पाह ॥ १२० ॥ अत्पाह ॥

# Nehru Centre

IN nearly 3000 verses extracted from a large number of original texts on Indian astronomy, and presented with English translation, notes and tables, this publication attempts to provide a scientific insight into the main characteristics of Indian astronomy, the methodologies evolved, instruments used, mathematically developed computation procedures and the innovative trends as well as the rationale associated with them. Several of the passages throw light on the importance attached to continued observation and the concern for accuracy of the traditional Indian astronomer, which would set at rest the general view that Indian astronomy has been, by and large, speculative and empirical. The material presented in this *Source-book* would possibly lead to fresh attempts towards a comparative and critical appreciation of Indian astronomy in relation to those of the other culture-areas.

Dr. B.V. SUBBARAYAPPA, (b. 1925), M.Sc. (Chem.), Ph.D. (History of Science), is Director of the Centre for History and Philosophy of Science, Indian Institute of World Culture, Bangalore. Well versed in Sanskrit, his special studies for over 25 years have been devoted to the history and philosophy of science, particularly of India. He was formerly Executive Secretary, Indian National Science Academy and Member-Secretary of the National Commission for History of Science in India.

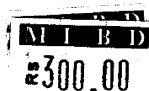
He has published over 70 papers on history of science, science and society and related subjects. His other publications include: *A Concise History of Science in India* (Jt. Ed. and author of five chapters), the *Rasārṇavakalpa* (Jt. author), *Science and Society in Soviet Central Asia*, *Scientific and Technical Exchanges between Soviet Central Asia and India in the Medieval Period* (Ed.), *Science in India: A Changing Profile* (Jt. Ed.).

He is an elected Member of the Executive Council of the International Union of History and Philosophy of Science and a Corresponding-Member of the International Academy of History of Science, Paris.

Professor K.V. SARMA, (b. 1919), B.Sc., M.A. (Sanskrit), D.Litt. (History of Astronomy), former Director of the well-known Vishveshvaranand Institute of Sanskrit and Indological Studies, Hoshiarpur (Panjab), is now Hon. Professor, Adyar Library and Research Centre, Madras.

He has critically edited or translated over 50 texts, on Indian astronomy mainly produced in Kerala, based on original manuscripts. Amongst them special mention might be made of *Ḍṛggaṇita*, *Grahacārāṇibandhana*, *Tantrasaṅgraha*, *Sphuṭanirṇaya*, *Goladīpika*, *Rāśigolasphuṭanīti*, *Candra-sphuṭāpti*, *Gaṇitayuktayah* and *Jyotirmimamsa*. He has published over 50 research papers on the subject and a *History of the Kerala School of Hindu Astronomy*.

He served as a Member of the National Commission for the History of Sciences in India and continues as a Member of its Advisory Committee (Ancient Period).



IN nearly 3000 verses extracted from a large number of original texts on Indian astronomy, and presented with English translation, notes and tables, this publication attempts to provide a scientific insight into the main characteristics of Indian astronomy, the methodologies evolved, instruments used, mathematically developed computation procedures and the innovative trends as well as the rationale associated with them. Several of the passages throw light on the importance attached to continued observation and the concern for accuracy of the traditional Indian astronomer, which would set at rest the general view that Indian astronomy has been, by and large, speculative and empirical. The material presented in this *Source-book* would possibly lead to fresh attempts towards a comparative and critical appreciation of Indian astronomy in relation to those of the other culture-areas.

Dr. B.V. SUBBARAYAPPA, (b. 1925), M.Sc. (Chem.), Ph.D. (History of Science), is Director of the Centre for History and Philosophy of Science, Indian Institute of World Culture, Bangalore. Well versed in Sanskrit, his special studies for over 25 years have been devoted to the history and philosophy of science, particularly of India. He was formerly Executive Secretary, Indian National Science Academy and Member-Secretary of the National Commission for History of Science in India.

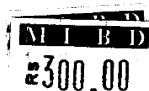
He has published over 70 papers on history of science, science and society and related subjects. His other publications include: *A Concise History of Science in India* (Jt. Ed. and author of five chapters), the *Rasārṇavakalpa* (Jt. author), *Science and Society in Soviet Central Asia*, *Scientific and Technical Exchanges between Soviet Central Asia and India in the Medieval Period* (Ed.), *Science in India: A Changing Profile* (Jt. Ed.).

He is an elected Member of the Executive Council of the International Union of History and Philosophy of Science and a Corresponding-Member of the International Academy of History of Science, Paris.

Professor K.V. SARMA, (b. 1919), B.Sc., M.A. (Sanskrit), D.Litt. (History of Astronomy), former Director of the well-known Vishveshvaranand Institute of Sanskrit and Indological Studies, Hoshiarpur (Panjab), is now Hon. Professor, Adyar Library and Research Centre, Madras.

He has critically edited or translated over 50 texts, on Indian astronomy mainly produced in Kerala, based on original manuscripts. Amongst them special mention might be made of *Ḍṛggaṇita*, *Grahacārānibandhana*, *Tantrasaṅgraha*, *Sphuṭanirṇaya*, *Goladīpika*, *Rāśigolasphuṭanīti*, *Candra-sphuṭāpti*, *Gaṇitayuktayah* and *Jyotirmimamsa*. He has published over 50 research papers on the subject and a *History of the Kerala School of Hindu Astronomy*.

He served as a Member of the National Commission for the History of Sciences in India and continues as a Member of its Advisory Committee (Ancient Period).



© Nehru Centre, Bombay, 1985

*Published by*

**NEHRU CENTRE**

Dr. Annie Besant Road, Worli, Bombay 400 018

*Printed at*

**THE VASANTA PRESS**

The Theosophical Society, Adyar, Madras 600 020, India



IN nearly 3000 verses extracted from a large number of original texts on Indian astronomy, and presented with English translation, notes and tables, this publication attempts to provide a scientific insight into the main characteristics of Indian astronomy, the methodologies evolved, instruments used, mathematically developed computation procedures and the innovative trends as well as the rationale associated with them. Several of the passages throw light on the importance attached to continued observation and the concern for accuracy of the traditional Indian astronomer, which would set at rest the general view that Indian astronomy has been, by and large, speculative and empirical. The material presented in this *Source-book* would possibly lead to fresh attempts towards a comparative and critical appreciation of Indian astronomy in relation to those of the other culture-areas.

Dr. B.V. SUBBARAYAPPA, (b. 1925), M.Sc. (Chem.), Ph.D. (History of Science), is Director of the Centre for History and Philosophy of Science, Indian Institute of World Culture, Bangalore. Well versed in Sanskrit, his special studies for over 25 years have been devoted to the history and philosophy of science, particularly of India. He was formerly Executive Secretary, Indian National Science Academy and Member-Secretary of the National Commission for History of Science in India.

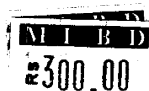
He has published over 70 papers on history of science, science and society and related subjects. His other publications include: *A Concise History of Science in India* (Jt. Ed. and author of five chapters), the *Rasārṇavakalpa* (Jt. author), *Science and Society in Soviet Central Asia*, *Scientific and Technical Exchanges between Soviet Central Asia and India in the Medieval Period* (Ed.), *Science in India: A Changing Profile* (Jt. Ed.).

He is an elected Member of the Executive Council of the International Union of History and Philosophy of Science and a Corresponding-Member of the International Academy of History of Science, Paris.

Professor K.V. SARMA, (b. 1919), B.Sc., M.A. (Sanskrit), D.Litt. (History of Astronomy), former Director of the well-known Vishveshvaranand Institute of Sanskrit and Indological Studies, Hoshiarpur (Panjab), is now Hon. Professor, Adyar Library and Research Centre, Madras.

He has critically edited or translated over 50 texts, on Indian astronomy mainly produced in Kerala, based on original manuscripts. Amongst them special mention might be made of *Ḍṛggaṇita*, *Grahacārāṇibandhana*, *Tantrasaṅgraha*, *Sphuṭanirṇaya*, *Goladīpika*, *Rāśigolasphuṭanīti*, *Candra-sphuṭāpti*, *Gaṇitayuktayaḥ* and *Jyotirmimamsa*. He has published over 50 research papers on the subject and a *History of the Kerala School of Hindu Astronomy*.

He served as a Member of the National Commission for the History of Sciences in India and continues as a Member of its Advisory Committee (Ancient Period).



IN nearly 3000 verses extracted from a large number of original texts on Indian astronomy, and presented with English translation, notes and tables, this publication attempts to provide a scientific insight into the main characteristics of Indian astronomy, the methodologies evolved, instruments used, mathematically developed computation procedures and the innovative trends as well as the rationale associated with them. Several of the passages throw light on the importance attached to continued observation and the concern for accuracy of the traditional Indian astronomer, which would set at rest the general view that Indian astronomy has been, by and large, speculative and empirical. The material presented in this *Source-book* would possibly lead to fresh attempts towards a comparative and critical appreciation of Indian astronomy in relation to those of the other culture-areas.

Dr. B.V. SUBBARAYAPPA, (b. 1925), M.Sc. (Chem.), Ph.D. (History of Science), is Director of the Centre for History and Philosophy of Science, Indian Institute of World Culture, Bangalore. Well versed in Sanskrit, his special studies for over 25 years have been devoted to the history and philosophy of science, particularly of India. He was formerly Executive Secretary, Indian National Science Academy and Member-Secretary of the National Commission for History of Science in India.

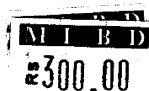
He has published over 70 papers on history of science, science and society and related subjects. His other publications include: *A Concise History of Science in India* (Jt. Ed. and author of five chapters), the *Rasārṇavakalpa* (Jt. author), *Science and Society in Soviet Central Asia*, *Scientific and Technical Exchanges between Soviet Central Asia and India in the Medieval Period* (Ed.), *Science in India: A Changing Profile* (Jt. Ed.).

He is an elected Member of the Executive Council of the International Union of History and Philosophy of Science and a Corresponding-Member of the International Academy of History of Science, Paris.

Professor K.V. SARMA, (b. 1919), B.Sc., M.A. (Sanskrit), D.Litt. (History of Astronomy), former Director of the well-known Vishveshvaranand Institute of Sanskrit and Indological Studies, Hoshiarpur (Panjab), is now Hon. Professor, Adyar Library and Research Centre, Madras.

He has critically edited or translated over 50 texts, on Indian astronomy mainly produced in Kerala, based on original manuscripts. Amongst them special mention might be made of *Ḍṛggaṇita*, *Grahacārāṇibandhana*, *Tantrasaṅgraha*, *Sphuṭanirṇaya*, *Goladīpika*, *Rāśigolasphuṭanīti*, *Candra-sphuṭāpti*, *Gaṇitayuktayaḥ* and *Jyotirmimamsa*. He has published over 50 research papers on the subject and a *History of the Kerala School of Hindu Astronomy*.

He served as a Member of the National Commission for the History of Sciences in India and continues as a Member of its Advisory Committee (Ancient Period).



IN nearly 3000 verses extracted from a large number of original texts on Indian astronomy, and presented with English translation, notes and tables, this publication attempts to provide a scientific insight into the main characteristics of Indian astronomy, the methodologies evolved, instruments used, mathematically developed computation procedures and the innovative trends as well as the rationale associated with them. Several of the passages throw light on the importance attached to continued observation and the concern for accuracy of the traditional Indian astronomer, which would set at rest the general view that Indian astronomy has been, by and large, speculative and empirical. The material presented in this *Source-book* would possibly lead to fresh attempts towards a comparative and critical appreciation of Indian astronomy in relation to those of the other culture-areas.

Dr. B.V. SUBBARAYAPPA, (b. 1925), M.Sc. (Chem.), Ph.D. (History of Science), is Director of the Centre for History and Philosophy of Science, Indian Institute of World Culture, Bangalore. Well versed in Sanskrit, his special studies for over 25 years have been devoted to the history and philosophy of science, particularly of India. He was formerly Executive Secretary, Indian National Science Academy and Member-Secretary of the National Commission for History of Science in India.

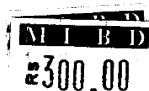
He has published over 70 papers on history of science, science and society and related subjects. His other publications include: *A Concise History of Science in India* (Jt. Ed. and author of five chapters), the *Rasārṇavakalpa* (Jt. author), *Science and Society in Soviet Central Asia*, *Scientific and Technical Exchanges between Soviet Central Asia and India in the Medieval Period* (Ed.), *Science in India: A Changing Profile* (Jt. Ed.).

He is an elected Member of the Executive Council of the International Union of History and Philosophy of Science and a Corresponding-Member of the International Academy of History of Science, Paris.

Professor K.V. SARMA, (b. 1919), B.Sc., M.A. (Sanskrit), D.Litt. (History of Astronomy), former Director of the well-known Vishveshvaranand Institute of Sanskrit and Indological Studies, Hoshiarpur (Panjab), is now Hon. Professor, Adyar Library and Research Centre, Madras.

He has critically edited or translated over 50 texts, on Indian astronomy mainly produced in Kerala, based on original manuscripts. Amongst them special mention might be made of *Ḍṛggaṇita*, *Grahacārāṇibandhana*, *Tantrasaṅgraha*, *Sphuṭanirṇaya*, *Goladīpika*, *Rāśigolasphuṭanīti*, *Candra-sphuṭāpti*, *Gaṇitayuktayaḥ* and *Jyotirmimamsa*. He has published over 50 research papers on the subject and a *History of the Kerala School of Hindu Astronomy*.

He served as a Member of the National Commission for the History of Sciences in India and continues as a Member of its Advisory Committee (Ancient Period).



IN nearly 3000 verses extracted from a large number of original texts on Indian astronomy, and presented with English translation, notes and tables, this publication attempts to provide a scientific insight into the main characteristics of Indian astronomy, the methodologies evolved, instruments used, mathematically developed computation procedures and the innovative trends as well as the rationale associated with them. Several of the passages throw light on the importance attached to continued observation and the concern for accuracy of the traditional Indian astronomer, which would set at rest the general view that Indian astronomy has been, by and large, speculative and empirical. The material presented in this *Source-book* would possibly lead to fresh attempts towards a comparative and critical appreciation of Indian astronomy in relation to those of the other culture-areas.

Dr. B.V. SUBBARAYAPPA, (b. 1925), M.Sc. (Chem.), Ph.D. (History of Science), is Director of the Centre for History and Philosophy of Science, Indian Institute of World Culture, Bangalore. Well versed in Sanskrit, his special studies for over 25 years have been devoted to the history and philosophy of science, particularly of India. He was formerly Executive Secretary, Indian National Science Academy and Member-Secretary of the National Commission for History of Science in India.

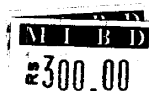
He has published over 70 papers on history of science, science and society and related subjects. His other publications include: *A Concise History of Science in India* (Jt. Ed. and author of five chapters), the *Rasārṇavakalpa* (Jt. author), *Science and Society in Soviet Central Asia*, *Scientific and Technical Exchanges between Soviet Central Asia and India in the Medieval Period* (Ed.), *Science in India: A Changing Profile* (Jt. Ed.).

He is an elected Member of the Executive Council of the International Union of History and Philosophy of Science and a Corresponding-Member of the International Academy of History of Science, Paris.

Professor K.V. SARMA, (b. 1919), B.Sc., M.A. (Sanskrit), D.Litt. (History of Astronomy), former Director of the well-known Vishveshvaranand Institute of Sanskrit and Indological Studies, Hoshiarpur (Panjab), is now Hon. Professor, Adyar Library and Research Centre, Madras.

He has critically edited or translated over 50 texts, on Indian astronomy mainly produced in Kerala, based on original manuscripts. Amongst them special mention might be made of *Ḍṛggaṇita*, *Grahacārāṇibandhana*, *Tantrasaṅgraha*, *Sphuṭanirṇaya*, *Goladīpika*, *Rāśigolasphuṭanīti*, *Candra-sphuṭāpti*, *Gaṇitayuktayaḥ* and *Jyotirmimamsa*. He has published over 50 research papers on the subject and a *History of the Kerala School of Hindu Astronomy*.

He served as a Member of the National Commission for the History of Sciences in India and continues as a Member of its Advisory Committee (Ancient Period).





## CONTENTS

	PAGE
<b>5. Erroneous Notions</b>	... 41
1. Need for removing erroneous notions. 2. The several erroneous notions. 3. Doubts on solstices removed. 4. Doubts on nightfall removed. 5. Doubts on Meru cleared. 6. Visibility of the Moon to the manes. 7. Assertion that the Moon is below the Sun. 8. Views about the Moon corrected. 9. Doubts on the size and shape of the Earth clarified. 10. Doubts on the Earth's situation cleared. 11. Doubts on the Earth's motion clarified. 12. Views on two Suns and Moons corrected. 13. Eclipses: Refutation of unscientific views.	
<b>6. Numeration</b>	... 46
1. Need of numerals for calculation. 2. The decimal place value. 3. Decimal numbers. 4. Depiction of numbers: According to Āryabhaṭa. 5. Kaṭapayādi notation—i. 6. Kaṭapayādi notation—ii.	
<b>7. Measures of Time etc.</b>	... 49
1. Division of Time in the Veda. 2. Yuga in the Vedāṅga: Five-year yuga. 3. Measures of time in the Vedāṅga. 4. General time measures. 5. Modes of reckoning time. 6. Day-time. 7. Concept of the yugas: Kṛta, Tretā, Dvāpara and Kali. 8. Yuga revolutions etc. 9. Planetary conjunctions and revolutions of the apogees. 10. Conversion of eras: Śaka to Kali. 11.—Śaka to Jovian. 12.—Kollam to Kali. 13.—Vikrama-Saṃvat to Hijri. 14. Linear measures. 15. Volume measures. 16. Weight measures. 17. Measures of angles. 18. R sine tables. 19. Direct computation of R sines.	
<b>II. ASTRONOMICAL INSTRUMENTS</b>	
<b>8. Armillary Sphere</b>	... 74
1. Importance of the armillary sphere. 2. Components of the armillary sphere. 3. Sphere of the sky. 4. Sphere of asterisms. 5. Sphere of the planets. 6. The armillary sphere and its use.	
<b>9. Observatories</b>	... 81
1. Observatory at Mahodayapura in Kerala. 2. Kāśi Mānamandira observatory. 3. Yāmyottara-yantra. 4. Some unknown instrument. 5. Samrāt-yantra. 6. Bhitti-yantra. 7. Nāḍimaṇḍala. 8. Cakra-yantra. 9. Small Samrāt-yantra. 10. Digamśa-yantra. 11. Aperture gnomon.	
<b>10. Instruments</b>	... 86
1. Instruments and their accessories. 2. Automatically rotating sphere. 3. Self-rotating wheel. 4. Shadow instruments. 5. Water instruments. 6. Circle instrument. 7. Semi-circle instrument. 8. Scissors instrument. 9. Kapāla and Piṭha instruments. 10. Bhagaṇa-yantra. 11. Clepsydra. 12. Gnomon and orientation. 13. Needle instrument. 14. Cart instrument. 15. The graduated tube. 16. Nalaka instrument. 17. Umbrella instrument. 18. Phalaka instrument. 19. Observations of planets with instruments.	

IN nearly 3000 verses extracted from a large number of original texts on Indian astronomy, and presented with English translation, notes and tables, this publication attempts to provide a scientific insight into the main characteristics of Indian astronomy, the methodologies evolved, instruments used, mathematically developed computation procedures and the innovative trends as well as the rationale associated with them. Several of the passages throw light on the importance attached to continued observation and the concern for accuracy of the traditional Indian astronomer, which would set at rest the general view that Indian astronomy has been, by and large, speculative and empirical. The material presented in this *Source-book* would possibly lead to fresh attempts towards a comparative and critical appreciation of Indian astronomy in relation to those of the other culture-areas.

Dr. B.V. SUBBARAYAPPA, (b. 1925), M.Sc. (Chem.), Ph.D. (History of Science), is Director of the Centre for History and Philosophy of Science, Indian Institute of World Culture, Bangalore. Well versed in Sanskrit, his special studies for over 25 years have been devoted to the history and philosophy of science, particularly of India. He was formerly Executive Secretary, Indian National Science Academy and Member-Secretary of the National Commission for History of Science in India.

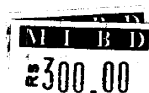
He has published over 70 papers on history of science, science and society and related subjects. His other publications include: *A Concise History of Science in India* (Jt. Ed. and author of five chapters), the *Rasārṇavakalpa* (Jt. author), *Science and Society in Soviet Central Asia*, *Scientific and Technical Exchanges between Soviet Central Asia and India in the Medieval Period* (Ed.), *Science in India: A Changing Profile* (Jt. Ed.).

He is an elected Member of the Executive Council of the International Union of History and Philosophy of Science and a Corresponding-Member of the International Academy of History of Science, Paris.

Professor K.V. SARMA, (b. 1919), B.Sc., M.A. (Sanskrit), D.Litt. (History of Astronomy), former Director of the well-known Vishveshvaranand Institute of Sanskrit and Indological Studies, Hoshiarpur (Panjab), is now Hon. Professor, Adyar Library and Research Centre, Madras.

He has critically edited or translated over 50 texts, on Indian astronomy mainly produced in Kerala, based on original manuscripts. Amongst them special mention might be made of *Ḍṛggaṇita*, *Grahacārānibandhana*, *Tantrasaṅgraha*, *Sphuṭanirṇaya*, *Goladīpika*, *Rāśigolasphuṭanīti*, *Candra-sphuṭāpti*, *Gaṇitayuktayah* and *Jyotirmimamsa*. He has published over 50 research papers on the subject and a *History of the Kerala School of Hindu Astronomy*.

He served as a Member of the National Commission for the History of Sciences in India and continues as a Member of its Advisory Committee (Ancient Period).



#### IV. OCCULTATION

##### 16. Eclipses ... 196

1. Cause stated in the Ṛgveda. 2. Cause of the lunar eclipse. 3. Lunar eclipse: Principle of computation. 4. Lunar eclipse computation: Vāsiṣṭha and Pauliṣa. 5. —Saurasiddhānta. 6. —Āryabhaṭīya. 7. —Āryabhaṭa's Midnight system. 8. —Emendation by Brahmagupta. 9. —Bhāskara I. 10. —Lalla. 11. —Bhāskara II. 12. —Karaṇaratna. 13. —Śrīpati. 14. —Vākyakaraṇa. 15. —Grahalāghava. 16. Lunar eclipse diagram: Vāsiṣṭha Pauliṣa. 17. —Āryabhaṭa's Midnight system. 18. —Bhāskara I. 19. —Lalla. 20. —Sūryasiddhānta. 21. —Bhāskara II. 22. —Karaṇaratna. 23. Solar eclipse: Computation: Pauliṣa. 24. —Romakasiddhānta. 25. —Saurasiddhānta. 26. —Āryabhaṭa's Midnight system. 27. —Bhāskara I. 28. —Lalla. 29. —Mahāsiddhānta. 30. —Bhāskara II. 31. —Karaṇaratna. 32. —Śrīpati. 33. —Grahalāghava. 34. —Solar eclipse diagram: Romakasiddhānta. 35. —Saurasiddhānta. 36. Colour of eclipses. 37. Conditions for non-prediction of eclipses. 38. —Inscriptional references: Lunar eclipses. 38. Solar eclipses.

##### 17. Phases of the Moon ... 241

1. Periodical appearance of the Moon. 2. Moon's luminosity. 3. Conditions of Moon's visibility. 4. Preliminaries for computation. 5. Visibility corrections: Ākṣa, Āyana and the Third. 6. Rising and setting of the Moon. 7. Moon's shadow. 8. Computation of Moon's cusps. 9. Moon's cusps—diagram.

##### 18. Heliacal rising and setting of Planets and Stars ... 254

1. Heliacal rising and setting of planets. 2. Days of rising and setting. 3. Planetary elongation for rising and setting. 4. Visibility corrections. 5. Computation of rising and setting. 6. Jupiter's rising and setting. 7. Venus: Rising and setting. 8. Rising and setting of a star. 9. Canopus: Rising.

##### 19. Conjunction of Planets ... 264

1. Types of planetary conjunctions. 2. Conjunction: Principle of computation. 3. Computation of conjunction.

##### 20. Conjunction of Stars and Planets ... 271

1. Conjunction of stars and planets. 2. Principle of planet-star conjunction. 3. Occultation of stars by planets. 4. Occultation of Rohiṇī by planets. 5. Occultation of stars by the Moon. 6. Time of star-planet conjunction.

#### V. INNOVATIVE TRENDS

##### 21. Novel Innovations ... 274

1. True longitude computation on the sphere of the zodiac. 2. Computation of True Moon. 3. Simplified astronomical procedures.

#### IV. OCCULTATION

##### 16. Eclipses ... 196

1. Cause stated in the Ṛgveda. 2. Cause of the lunar eclipse. 3. Lunar eclipse: Principle of computation. 4. Lunar eclipse computation: Vāsiṣṭha and Pauliṣa. 5. —Saurasiddhānta. 6. —Āryabhaṭīya. 7. —Āryabhaṭa's Midnight system. 8. —Emendation by Brahmagupta. 9. —Bhāskara I. 10. —Lalla. 11. —Bhāskara II. 12. —Karaṇaratna. 13. —Śrīpati. 14. —Vākyakaraṇa. 15. —Grahalāghava. 16. Lunar eclipse diagram: Vāsiṣṭha Pauliṣa. 17. —Āryabhaṭa's Midnight system. 18. —Bhāskara I. 19. —Lalla. 20. —Sūryasiddhānta. 21. —Bhāskara II. 22. —Karaṇaratna. 23. Solar eclipse: Computation: Pauliṣa. 24. —Romakasiddhānta. 25. —Saurasiddhānta. 26. —Āryabhaṭa's Midnight system. 27. —Bhāskara I. 28. —Lalla. 29. —Mahāsiddhānta. 30. —Bhāskara II. 31. —Karaṇaratna. 32. —Śrīpati. 33. —Grahalāghava. 34. —Solar eclipse diagram: Romakasiddhānta. 35. —Saurasiddhānta. 36. Colour of eclipses. 37. Conditions for non-prediction of eclipses. 38. —Inscriptional references: Lunar eclipses. 38. Solar eclipses.

##### 17. Phases of the Moon ... 241

1. Periodical appearance of the Moon. 2. Moon's luminosity. 3. Conditions of Moon's visibility. 4. Preliminaries for computation. 5. Visibility corrections: Ākṣa, Āyana and the Third. 6. Rising and setting of the Moon. 7. Moon's shadow. 8. Computation of Moon's cusps. 9. Moon's cusps—diagram.

##### 18. Heliacal rising and setting of Planets and Stars ... 254

1. Heliacal rising and setting of planets. 2. Days of rising and setting. 3. Planetary elongation for rising and setting. 4. Visibility corrections. 5. Computation of rising and setting. 6. Jupiter's rising and setting. 7. Venus: Rising and setting. 8. Rising and setting of a star. 9. Canopus: Rising.

##### 19. Conjunction of Planets ... 264

1. Types of planetary conjunctions. 2. Conjunction: Principle of computation. 3. Computation of conjunction.

##### 20. Conjunction of Stars and Planets ... 271

1. Conjunction of stars and planets. 2. Principle of planet-star conjunction. 3. Occultation of stars by planets. 4. Occultation of Rohiṇī by planets. 5. Occultation of stars by the Moon. 6. Time of star-planet conjunction.

#### V. INNOVATIVE TRENDS

##### 21. Novel Innovations ... 274

1. True longitude computation on the sphere of the zodiac. 2. Computation of True Moon. 3. Simplified astronomical procedures.

#### IV. OCCULTATION

##### 16. Eclipses ... 196

1. Cause stated in the Ṛgveda. 2. Cause of the lunar eclipse. 3. Lunar eclipse: Principle of computation. 4. Lunar eclipse computation: Vāsiṣṭha and Pauliṣa. 5. —Saurasiddhānta. 6. —Āryabhaṭīya. 7. —Āryabhaṭa's Midnight system. 8. —Emendation by Brahmagupta. 9. —Bhāskara I. 10. —Lalla. 11. —Bhāskara II. 12. —Karaṇaratna. 13. —Śrīpati. 14. —Vākyakaraṇa. 15. —Grahalāghava. 16. Lunar eclipse diagram: Vāsiṣṭha Pauliṣa. 17. —Āryabhaṭa's Midnight system. 18. —Bhāskara I. 19. —Lalla. 20. —Sūryasiddhānta. 21. —Bhāskara II. 22. —Karaṇaratna. 23. Solar eclipse: Computation: Pauliṣa. 24. —Romakasiddhānta. 25. —Saurasiddhānta. 26. —Āryabhaṭa's Midnight system. 27. —Bhāskara I. 28. —Lalla. 29. —Mahāsiddhānta. 30. —Bhāskara II. 31. —Karaṇaratna. 32. —Śrīpati. 33. —Grahalāghava. 34. —Solar eclipse diagram: Romakasiddhānta. 35. —Saurasiddhānta. 36. Colour of eclipses. 37. Conditions for non-prediction of eclipses. 38. —Inscriptional references: Lunar eclipses. 38. Solar eclipses.

##### 17. Phases of the Moon ... 241

1. Periodical appearance of the Moon. 2. Moon's luminosity. 3. Conditions of Moon's visibility. 4. Preliminaries for computation. 5. Visibility corrections: Ākṣa, Āyana and the Third. 6. Rising and setting of the Moon. 7. Moon's shadow. 8. Computation of Moon's cusps. 9. Moon's cusps—diagram.

##### 18. Heliacal rising and setting of Planets and Stars ... 254

1. Heliacal rising and setting of planets. 2. Days of rising and setting. 3. Planetary elongation for rising and setting. 4. Visibility corrections. 5. Computation of rising and setting. 6. Jupiter's rising and setting. 7. Venus: Rising and setting. 8. Rising and setting of a star. 9. Canopus: Rising.

##### 19. Conjunction of Planets ... 264

1. Types of planetary conjunctions. 2. Conjunction: Principle of computation. 3. Computation of conjunction.

##### 20. Conjunction of Stars and Planets ... 271

1. Conjunction of stars and planets. 2. Principle of planet-star conjunction. 3. Occultation of stars by planets. 4. Occultation of Rohiṇī by planets. 5. Occultation of stars by the Moon. 6. Time of star-planet conjunction.

#### V. INNOVATIVE TRENDS

##### 21. Novel Innovations ... 274

1. True longitude computation on the sphere of the zodiac. 2. Computation of True Moon. 3. Simplified astronomical procedures.

#### IV. OCCULTATION

##### 16. Eclipses ... 196

1. Cause stated in the Ṛgveda. 2. Cause of the lunar eclipse. 3. Lunar eclipse: Principle of computation. 4. Lunar eclipse computation: Vāsiṣṭha and Pauliṣa. 5. —Saurasiddhānta. 6. —Āryabhaṭīya. 7. —Āryabhaṭa's Midnight system. 8. —Emendation by Brahmagupta. 9. —Bhāskara I. 10. —Lalla. 11. —Bhāskara II. 12. —Karaṇaratna. 13. —Śrīpati. 14. —Vākyakaraṇa. 15. —Grahalāghava. 16. Lunar eclipse diagram: Vāsiṣṭha Pauliṣa. 17. —Āryabhaṭa's Midnight system. 18. —Bhāskara I. 19. —Lalla. 20. —Sūryasiddhānta. 21. —Bhāskara II. 22. —Karaṇaratna. 23. Solar eclipse: Computation: Pauliṣa. 24. —Romakasiddhānta. 25. —Saurasiddhānta. 26. —Āryabhaṭa's Midnight system. 27. —Bhāskara I. 28. —Lalla. 29. —Mahāsiddhānta. 30. —Bhāskara II. 31. —Karaṇaratna. 32. —Śrīpati. 33. —Grahalāghava. 34. —Solar eclipse diagram: Romakasiddhānta. 35. —Saurasiddhānta. 36. Colour of eclipses. 37. Conditions for non-prediction of eclipses. 38. —Inscriptional references: Lunar eclipses. 38. Solar eclipses.

##### 17. Phases of the Moon ... 241

1. Periodical appearance of the Moon. 2. Moon's luminosity. 3. Conditions of Moon's visibility. 4. Preliminaries for computation. 5. Visibility corrections: Ākṣa, Āyana and the Third. 6. Rising and setting of the Moon. 7. Moon's shadow. 8. Computation of Moon's cusps. 9. Moon's cusps—diagram.

##### 18. Heliacal rising and setting of Planets and Stars ... 254

1. Heliacal rising and setting of planets. 2. Days of rising and setting. 3. Planetary elongation for rising and setting. 4. Visibility corrections. 5. Computation of rising and setting. 6. Jupiter's rising and setting. 7. Venus: Rising and setting. 8. Rising and setting of a star. 9. Canopus: Rising.

##### 19. Conjunction of Planets ... 264

1. Types of planetary conjunctions. 2. Conjunction: Principle of computation. 3. Computation of conjunction.

##### 20. Conjunction of Stars and Planets ... 271

1. Conjunction of stars and planets. 2. Principle of planet-star conjunction. 3. Occultation of stars by planets. 4. Occultation of Rohiṇī by planets. 5. Occultation of stars by the Moon. 6. Time of star-planet conjunction.

#### V. INNOVATIVE TRENDS

##### 21. Novel Innovations ... 274

1. True longitude computation on the sphere of the zodiac. 2. Computation of True Moon. 3. Simplified astronomical procedures.



#### IV. OCCULTATION

##### 16. Eclipses ... 196

1. Cause stated in the Ṛgveda. 2. Cause of the lunar eclipse. 3. Lunar eclipse: Principle of computation. 4. Lunar eclipse computation: Vāsiṣṭha and Pauliṣa. 5. —Saurasiddhānta. 6. —Āryabhaṭīya. 7. —Āryabhaṭa's Midnight system. 8. —Emendation by Brahmagupta. 9. —Bhāskara I. 10. —Lalla. 11. —Bhāskara II. 12. —Karaṇaratna. 13. —Śrīpati. 14. —Vākyakaraṇa. 15. —Grahalāghava. 16. Lunar eclipse diagram: Vāsiṣṭha Pauliṣa. 17. —Āryabhaṭa's Midnight system. 18. —Bhāskara I. 19. —Lalla. 20. —Sūryasiddhānta. 21. —Bhāskara II. 22. —Karaṇaratna. 23. Solar eclipse: Computation: Pauliṣa. 24. —Romakasiddhānta. 25. —Saurasiddhānta. 26. —Āryabhaṭa's Midnight system. 27. —Bhāskara I. 28. —Lalla. 29. —Mahāsiddhānta. 30. —Bhāskara II. 31. —Karaṇaratna. 32. —Śrīpati. 33. —Grahalāghava. 34. —Solar eclipse diagram: Romakasiddhānta. 35. —Saurasiddhānta. 36. Colour of eclipses. 37. Conditions for non-prediction of eclipses. 38. —Inscriptional references: Lunar eclipses. 38. Solar eclipses.

##### 17. Phases of the Moon ... 241

1. Periodical appearance of the Moon. 2. Moon's luminosity. 3. Conditions of Moon's visibility. 4. Preliminaries for computation. 5. Visibility corrections: Ākṣa, Āyana and the Third. 6. Rising and setting of the Moon. 7. Moon's shadow. 8. Computation of Moon's cusps. 9. Moon's cusps—diagram.

##### 18. Heliacal rising and setting of Planets and Stars ... 254

1. Heliacal rising and setting of planets. 2. Days of rising and setting. 3. Planetary elongation for rising and setting. 4. Visibility corrections. 5. Computation of rising and setting. 6. Jupiter's rising and setting. 7. Venus: Rising and setting. 8. Rising and setting of a star. 9. Canopus: Rising.

##### 19. Conjunction of Planets ... 264

1. Types of planetary conjunctions. 2. Conjunction: Principle of computation. 3. Computation of conjunction.

##### 20. Conjunction of Stars and Planets ... 271

1. Conjunction of stars and planets. 2. Principle of planet-star conjunction. 3. Occultation of stars by planets. 4. Occultation of Rohiṇī by planets. 5. Occultation of stars by the Moon. 6. Time of star-planet conjunction.

#### V. INNOVATIVE TRENDS

##### 21. Novel Innovations ... 274

1. True longitude computation on the sphere of the zodiac. 2. Computation of True Moon. 3. Simplified astronomical procedures.

#### IV. OCCULTATION

##### 16. Eclipses ... 196

1. Cause stated in the Ṛgveda. 2. Cause of the lunar eclipse. 3. Lunar eclipse: Principle of computation. 4. Lunar eclipse computation: Vāsiṣṭha and Pauliṣa. 5. —Saurasiddhānta. 6. —Āryabhaṭīya. 7. —Āryabhaṭa's Midnight system. 8. —Emendation by Brahmagupta. 9. —Bhāskara I. 10. —Lalla. 11. —Bhāskara II. 12. —Karaṇaratna. 13. —Śrīpati. 14. —Vākyakaraṇa. 15. —Grahalāghava. 16. Lunar eclipse diagram: Vāsiṣṭha Pauliṣa. 17. —Āryabhaṭa's Midnight system. 18. —Bhāskara I. 19. —Lalla. 20. —Sūryasiddhānta. 21. —Bhāskara II. 22. —Karaṇaratna. 23. Solar eclipse: Computation: Pauliṣa. 24. —Romakasiddhānta. 25. —Saurasiddhānta. 26. —Āryabhaṭa's Midnight system. 27. —Bhāskara I. 28. —Lalla. 29. —Mahāsiddhānta. 30. —Bhāskara II. 31. —Karaṇaratna. 32. —Śrīpati. 33. —Grahalāghava. 34. —Solar eclipse diagram: Romakasiddhānta. 35. —Saurasiddhānta. 36. Colour of eclipses. 37. Conditions for non-prediction of eclipses. 38. —Inscriptional references: Lunar eclipses. 38. Solar eclipses.

##### 17. Phases of the Moon ... 241

1. Periodical appearance of the Moon. 2. Moon's luminosity. 3. Conditions of Moon's visibility. 4. Preliminaries for computation. 5. Visibility corrections: Ākṣa, Āyana and the Third. 6. Rising and setting of the Moon. 7. Moon's shadow. 8. Computation of Moon's cusps. 9. Moon's cusps—diagram.

##### 18. Heliacal rising and setting of Planets and Stars ... 254

1. Heliacal rising and setting of planets. 2. Days of rising and setting. 3. Planetary elongation for rising and setting. 4. Visibility corrections. 5. Computation of rising and setting. 6. Jupiter's rising and setting. 7. Venus: Rising and setting. 8. Rising and setting of a star. 9. Canopus: Rising.

##### 19. Conjunction of Planets ... 264

1. Types of planetary conjunctions. 2. Conjunction: Principle of computation. 3. Computation of conjunction.

##### 20. Conjunction of Stars and Planets ... 271

1. Conjunction of stars and planets. 2. Principle of planet-star conjunction. 3. Occultation of stars by planets. 4. Occultation of Rohiṇī by planets. 5. Occultation of stars by the Moon. 6. Time of star-planet conjunction.

#### V. INNOVATIVE TRENDS

##### 21. Novel Innovations ... 274

1. True longitude computation on the sphere of the zodiac. 2. Computation of True Moon. 3. Simplified astronomical procedures.

#### IV. OCCULTATION

##### 16. Eclipses ... 196

1. Cause stated in the Ṛgveda. 2. Cause of the lunar eclipse. 3. Lunar eclipse: Principle of computation. 4. Lunar eclipse computation: Vāsiṣṭha and Pauliṣa. 5. —Saurasiddhānta. 6. —Āryabhaṭīya. 7. —Āryabhaṭa's Midnight system. 8. —Emendation by Brahmagupta. 9. —Bhāskara I. 10. —Lalla. 11. —Bhāskara II. 12. —Karaṇaratna. 13. —Śrīpati. 14. —Vākyakaraṇa. 15. —Grahalāghava. 16. Lunar eclipse diagram: Vāsiṣṭha Pauliṣa. 17. —Āryabhaṭa's Midnight system. 18. —Bhāskara I. 19. —Lalla. 20. —Sūryasiddhānta. 21. —Bhāskara II. 22. —Karaṇaratna. 23. Solar eclipse: Computation: Pauliṣa. 24. —Romakasiddhānta. 25. —Saurasiddhānta. 26. —Āryabhaṭa's Midnight system. 27. —Bhāskara I. 28. —Lalla. 29. —Mahāsiddhānta. 30. —Bhāskara II. 31. —Karaṇaratna. 32. —Śrīpati. 33. —Grahalāghava. 34. —Solar eclipse diagram: Romakasiddhānta. 35. —Saurasiddhānta. 36. Colour of eclipses. 37. Conditions for non-prediction of eclipses. 38. —Inscriptional references: Lunar eclipses. 38. Solar eclipses.

##### 17. Phases of the Moon ... 241

1. Periodical appearance of the Moon. 2. Moon's luminosity. 3. Conditions of Moon's visibility. 4. Preliminaries for computation. 5. Visibility corrections: Ākṣa, Āyana and the Third. 6. Rising and setting of the Moon. 7. Moon's shadow. 8. Computation of Moon's cusps. 9. Moon's cusps—diagram.

##### 18. Heliacal rising and setting of Planets and Stars ... 254

1. Heliacal rising and setting of planets. 2. Days of rising and setting. 3. Planetary elongation for rising and setting. 4. Visibility corrections. 5. Computation of rising and setting. 6. Jupiter's rising and setting. 7. Venus: Rising and setting. 8. Rising and setting of a star. 9. Canopus: Rising.

##### 19. Conjunction of Planets ... 264

1. Types of planetary conjunctions. 2. Conjunction: Principle of computation. 3. Computation of conjunction.

##### 20. Conjunction of Stars and Planets ... 271

1. Conjunction of stars and planets. 2. Principle of planet-star conjunction. 3. Occultation of stars by planets. 4. Occultation of Rohiṇī by planets. 5. Occultation of stars by the Moon. 6. Time of star-planet conjunction.

#### V. INNOVATIVE TRENDS

##### 21. Novel Innovations ... 274

1. True longitude computation on the sphere of the zodiac. 2. Computation of True Moon. 3. Simplified astronomical procedures.

#### IV. OCCULTATION

##### 16. Eclipses ... 196

1. Cause stated in the Ṛgveda. 2. Cause of the lunar eclipse. 3. Lunar eclipse: Principle of computation. 4. Lunar eclipse computation: Vāsiṣṭha and Pauliṣa. 5. —Saurasiddhānta. 6. —Āryabhaṭīya. 7. —Āryabhaṭa's Midnight system. 8. —Emendation by Brahmagupta. 9. —Bhāskara I. 10. —Lalla. 11. —Bhāskara II. 12. —Karaṇaratna. 13. —Śrīpati. 14. —Vākyakaraṇa. 15. —Grahalāghava. 16. Lunar eclipse diagram: Vāsiṣṭha Pauliṣa. 17. —Āryabhaṭa's Midnight system. 18. —Bhāskara I. 19. —Lalla. 20. —Sūryasiddhānta. 21. —Bhāskara II. 22. —Karaṇaratna. 23. Solar eclipse: Computation: Pauliṣa. 24. —Romakasiddhānta. 25. —Saurasiddhānta. 26. —Āryabhaṭa's Midnight system. 27. —Bhāskara I. 28. —Lalla. 29. —Mahāsiddhānta. 30. —Bhāskara II. 31. —Karaṇaratna. 32. —Śrīpati. 33. —Grahalāghava. 34. —Solar eclipse diagram: Romakasiddhānta. 35. —Saurasiddhānta. 36. Colour of eclipses. 37. Conditions for non-prediction of eclipses. 38. —Inscriptional references: Lunar eclipses. 38. Solar eclipses.

##### 17. Phases of the Moon ... 241

1. Periodical appearance of the Moon. 2. Moon's luminosity. 3. Conditions of Moon's visibility. 4. Preliminaries for computation. 5. Visibility corrections: Ākṣa, Āyana and the Third. 6. Rising and setting of the Moon. 7. Moon's shadow. 8. Computation of Moon's cusps. 9. Moon's cusps—diagram.

##### 18. Heliacal rising and setting of Planets and Stars ... 254

1. Heliacal rising and setting of planets. 2. Days of rising and setting. 3. Planetary elongation for rising and setting. 4. Visibility corrections. 5. Computation of rising and setting. 6. Jupiter's rising and setting. 7. Venus: Rising and setting. 8. Rising and setting of a star. 9. Canopus: Rising.

##### 19. Conjunction of Planets ... 264

1. Types of planetary conjunctions. 2. Conjunction: Principle of computation. 3. Computation of conjunction.

##### 20. Conjunction of Stars and Planets ... 271

1. Conjunction of stars and planets. 2. Principle of planet-star conjunction. 3. Occultation of stars by planets. 4. Occultation of Rohiṇī by planets. 5. Occultation of stars by the Moon. 6. Time of star-planet conjunction.

#### V. INNOVATIVE TRENDS

##### 21. Novel Innovations ... 274

1. True longitude computation on the sphere of the zodiac. 2. Computation of True Moon. 3. Simplified astronomical procedures.

#### IV. OCCULTATION

##### 16. Eclipses ... 196

1. Cause stated in the Ṛgveda. 2. Cause of the lunar eclipse. 3. Lunar eclipse: Principle of computation. 4. Lunar eclipse computation: Vāsiṣṭha and Pauliṣa. 5. —Saurasiddhānta. 6. —Āryabhaṭīya. 7. —Āryabhaṭa's Midnight system. 8. —Emendation by Brahmagupta. 9. —Bhāskara I. 10. —Lalla. 11. —Bhāskara II. 12. —Karaṇaratna. 13. —Śrīpati. 14. —Vākyakaraṇa. 15. —Grahalāghava. 16. Lunar eclipse diagram: Vāsiṣṭha Pauliṣa. 17. —Āryabhaṭa's Midnight system. 18. —Bhāskara I. 19. —Lalla. 20. —Sūryasiddhānta. 21. —Bhāskara II. 22. —Karaṇaratna. 23. Solar eclipse: Computation: Pauliṣa. 24. —Romakasiddhānta. 25. —Saurasiddhānta. 26. —Āryabhaṭa's Midnight system. 27. —Bhāskara I. 28. —Lalla. 29. —Mahāsiddhānta. 30. —Bhāskara II. 31. —Karaṇaratna. 32. —Śrīpati. 33. —Grahalāghava. 34. —Solar eclipse diagram: Romakasiddhānta. 35. —Saurasiddhānta. 36. Colour of eclipses. 37. Conditions for non-prediction of eclipses. 38. —Inscriptional references: Lunar eclipses. 38. Solar eclipses.

##### 17. Phases of the Moon ... 241

1. Periodical appearance of the Moon. 2. Moon's luminosity. 3. Conditions of Moon's visibility. 4. Preliminaries for computation. 5. Visibility corrections: Ākṣa, Āyana and the Third. 6. Rising and setting of the Moon. 7. Moon's shadow. 8. Computation of Moon's cusps. 9. Moon's cusps—diagram.

##### 18. Heliacal rising and setting of Planets and Stars ... 254

1. Heliacal rising and setting of planets. 2. Days of rising and setting. 3. Planetary elongation for rising and setting. 4. Visibility corrections. 5. Computation of rising and setting. 6. Jupiter's rising and setting. 7. Venus: Rising and setting. 8. Rising and setting of a star. 9. Canopus: Rising.

##### 19. Conjunction of Planets ... 264

1. Types of planetary conjunctions. 2. Conjunction: Principle of computation. 3. Computation of conjunction.

##### 20. Conjunction of Stars and Planets ... 271

1. Conjunction of stars and planets. 2. Principle of planet-star conjunction. 3. Occultation of stars by planets. 4. Occultation of Rohiṇī by planets. 5. Occultation of stars by the Moon. 6. Time of star-planet conjunction.

#### V. INNOVATIVE TRENDS

##### 21. Novel Innovations ... 274

1. True longitude computation on the sphere of the zodiac. 2. Computation of True Moon. 3. Simplified astronomical procedures.

#### IV. OCCULTATION

##### 16. Eclipses ... 196

1. Cause stated in the Ṛgveda. 2. Cause of the lunar eclipse. 3. Lunar eclipse: Principle of computation. 4. Lunar eclipse computation: Vāsiṣṭha and Pauliṣa. 5. —Saurasiddhānta. 6. —Āryabhaṭīya. 7. —Āryabhaṭa's Midnight system. 8. —Emendation by Brahmagupta. 9. —Bhāskara I. 10. —Lalla. 11. —Bhāskara II. 12. —Karaṇaratna. 13. —Śrīpati. 14. —Vākyakaraṇa. 15. —Grahalāghava. 16. Lunar eclipse diagram: Vāsiṣṭha Pauliṣa. 17. —Āryabhaṭa's Midnight system. 18. —Bhāskara I. 19. —Lalla. 20. —Sūryasiddhānta. 21. —Bhāskara II. 22. —Karaṇaratna. 23. Solar eclipse: Computation: Pauliṣa. 24. —Romakasiddhānta. 25. —Saurasiddhānta. 26. —Āryabhaṭa's Midnight system. 27. —Bhāskara I. 28. —Lalla. 29. —Mahāsiddhānta. 30. —Bhāskara II. 31. —Karaṇaratna. 32. —Śrīpati. 33. —Grahalāghava. 34. —Solar eclipse diagram: Romakasiddhānta. 35. —Saurasiddhānta. 36. Colour of eclipses. 37. Conditions for non-prediction of eclipses. 38. —Inscriptional references: Lunar eclipses. 38. Solar eclipses.

##### 17. Phases of the Moon ... 241

1. Periodical appearance of the Moon. 2. Moon's luminosity. 3. Conditions of Moon's visibility. 4. Preliminaries for computation. 5. Visibility corrections: Ākṣa, Āyana and the Third. 6. Rising and setting of the Moon. 7. Moon's shadow. 8. Computation of Moon's cusps. 9. Moon's cusps—diagram.

##### 18. Heliacal rising and setting of Planets and Stars ... 254

1. Heliacal rising and setting of planets. 2. Days of rising and setting. 3. Planetary elongation for rising and setting. 4. Visibility corrections. 5. Computation of rising and setting. 6. Jupiter's rising and setting. 7. Venus: Rising and setting. 8. Rising and setting of a star. 9. Canopus: Rising.

##### 19. Conjunction of Planets ... 264

1. Types of planetary conjunctions. 2. Conjunction: Principle of computation. 3. Computation of conjunction.

##### 20. Conjunction of Stars and Planets ... 271

1. Conjunction of stars and planets. 2. Principle of planet-star conjunction. 3. Occultation of stars by planets. 4. Occultation of Rohiṇī by planets. 5. Occultation of stars by the Moon. 6. Time of star-planet conjunction.

#### V. INNOVATIVE TRENDS

##### 21. Novel Innovations ... 274

1. True longitude computation on the sphere of the zodiac. 2. Computation of True Moon. 3. Simplified astronomical procedures.



#### IV. OCCULTATION

##### 16. Eclipses ... 196

1. Cause stated in the Ṛgveda. 2. Cause of the lunar eclipse. 3. Lunar eclipse: Principle of computation. 4. Lunar eclipse computation: Vāsiṣṭha and Pauliṣa. 5. —Saurasiddhānta. 6. —Āryabhaṭīya. 7. —Āryabhaṭa's Midnight system. 8. —Emendation by Brahmagupta. 9. —Bhāskara I. 10. —Lalla. 11. —Bhāskara II. 12. —Karaṇaratna. 13. —Śrīpati. 14. —Vākyakaraṇa. 15. —Grahalāghava. 16. Lunar eclipse diagram: Vāsiṣṭha Pauliṣa. 17. —Āryabhaṭa's Midnight system. 18. —Bhāskara I. 19. —Lalla. 20. —Sūryasiddhānta. 21. —Bhāskara II. 22. —Karaṇaratna. 23. Solar eclipse: Computation: Pauliṣa. 24. —Romakasiddhānta. 25. —Saurasiddhānta. 26. —Āryabhaṭa's Midnight system. 27. —Bhāskara I. 28. —Lalla. 29. —Mahāsiddhānta. 30. —Bhāskara II. 31. —Karaṇaratna. 32. —Śrīpati. 33. —Grahalāghava. 34. —Solar eclipse diagram: Romakasiddhānta. 35. —Saurasiddhānta. 36. Colour of eclipses. 37. Conditions for non-prediction of eclipses. 38. —Inscriptional references: Lunar eclipses. 38. Solar eclipses.

##### 17. Phases of the Moon ... 241

1. Periodical appearance of the Moon. 2. Moon's luminosity. 3. Conditions of Moon's visibility. 4. Preliminaries for computation. 5. Visibility corrections: Ākṣa, Āyana and the Third. 6. Rising and setting of the Moon. 7. Moon's shadow. 8. Computation of Moon's cusps. 9. Moon's cusps—diagram.

##### 18. Heliacal rising and setting of Planets and Stars ... 254

1. Heliacal rising and setting of planets. 2. Days of rising and setting. 3. Planetary elongation for rising and setting. 4. Visibility corrections. 5. Computation of rising and setting. 6. Jupiter's rising and setting. 7. Venus: Rising and setting. 8. Rising and setting of a star. 9. Canopus: Rising.

##### 19. Conjunction of Planets ... 264

1. Types of planetary conjunctions. 2. Conjunction: Principle of computation. 3. Computation of conjunction.

##### 20. Conjunction of Stars and Planets ... 271

1. Conjunction of stars and planets. 2. Principle of planet-star conjunction. 3. Occultation of stars by planets. 4. Occultation of Rohiṇī by planets. 5. Occultation of stars by the Moon. 6. Time of star-planet conjunction.

#### V. INNOVATIVE TRENDS

##### 21. Novel Innovations ... 274

1. True longitude computation on the sphere of the zodiac. 2. Computation of True Moon. 3. Simplified astronomical procedures.

#### IV. OCCULTATION

##### 16. Eclipses ... 196

1. Cause stated in the Ṛgveda. 2. Cause of the lunar eclipse. 3. Lunar eclipse: Principle of computation. 4. Lunar eclipse computation: Vāsiṣṭha and Pauliṣa. 5. —Saurasiddhānta. 6. —Āryabhaṭīya. 7. —Āryabhaṭa's Midnight system. 8. —Emendation by Brahmagupta. 9. —Bhāskara I. 10. —Lalla. 11. —Bhāskara II. 12. —Karaṇaratna. 13. —Śrīpati. 14. —Vākyakaraṇa. 15. —Grahalāghava. 16. Lunar eclipse diagram: Vāsiṣṭha Pauliṣa. 17. —Āryabhaṭa's Midnight system. 18. —Bhāskara I. 19. —Lalla. 20. —Sūryasiddhānta. 21. —Bhāskara II. 22. —Karaṇaratna. 23. Solar eclipse: Computation: Pauliṣa. 24. —Romakasiddhānta. 25. —Saurasiddhānta. 26. —Āryabhaṭa's Midnight system. 27. —Bhāskara I. 28. —Lalla. 29. —Mahāsiddhānta. 30. —Bhāskara II. 31. —Karaṇaratna. 32. —Śrīpati. 33. —Grahalāghava. 34. —Solar eclipse diagram: Romakasiddhānta. 35. —Saurasiddhānta. 36. Colour of eclipses. 37. Conditions for non-prediction of eclipses. 38. —Inscriptional references: Lunar eclipses. 38. Solar eclipses.

##### 17. Phases of the Moon ... 241

1. Periodical appearance of the Moon. 2. Moon's luminosity. 3. Conditions of Moon's visibility. 4. Preliminaries for computation. 5. Visibility corrections: Ākṣa, Āyana and the Third. 6. Rising and setting of the Moon. 7. Moon's shadow. 8. Computation of Moon's cusps. 9. Moon's cusps—diagram.

##### 18. Heliacal rising and setting of Planets and Stars ... 254

1. Heliacal rising and setting of planets. 2. Days of rising and setting. 3. Planetary elongation for rising and setting. 4. Visibility corrections. 5. Computation of rising and setting. 6. Jupiter's rising and setting. 7. Venus: Rising and setting. 8. Rising and setting of a star. 9. Canopus: Rising.

##### 19. Conjunction of Planets ... 264

1. Types of planetary conjunctions. 2. Conjunction: Principle of computation. 3. Computation of conjunction.

##### 20. Conjunction of Stars and Planets ... 271

1. Conjunction of stars and planets. 2. Principle of planet-star conjunction. 3. Occultation of stars by planets. 4. Occultation of Rohiṇī by planets. 5. Occultation of stars by the Moon. 6. Time of star-planet conjunction.

#### V. INNOVATIVE TRENDS

##### 21. Novel Innovations ... 274

1. True longitude computation on the sphere of the zodiac. 2. Computation of True Moon. 3. Simplified astronomical procedures.

#### IV. OCCULTATION

##### 16. Eclipses ... 196

1. Cause stated in the Ṛgveda. 2. Cause of the lunar eclipse. 3. Lunar eclipse: Principle of computation. 4. Lunar eclipse computation: Vāsiṣṭha and Pauliṣa. 5. —Saurasiddhānta. 6. —Āryabhaṭīya. 7. —Āryabhaṭa's Midnight system. 8. —Emendation by Brahmagupta. 9. —Bhāskara I. 10. —Lalla. 11. —Bhāskara II. 12. —Karaṇaratna. 13. —Śrīpati. 14. —Vākyakaraṇa. 15. —Grahalāghava. 16. Lunar eclipse diagram: Vāsiṣṭha Pauliṣa. 17. —Āryabhaṭa's Midnight system. 18. —Bhāskara I. 19. —Lalla. 20. —Sūryasiddhānta. 21. —Bhāskara II. 22. —Karaṇaratna. 23. Solar eclipse: Computation: Pauliṣa. 24. —Romakasiddhānta. 25. —Saurasiddhānta. 26. —Āryabhaṭa's Midnight system. 27. —Bhāskara I. 28. —Lalla. 29. —Mahāsiddhānta. 30. —Bhāskara II. 31. —Karaṇaratna. 32. —Śrīpati. 33. —Grahalāghava. 34. —Solar eclipse diagram: Romakasiddhānta. 35. —Saurasiddhānta. 36. Colour of eclipses. 37. Conditions for non-prediction of eclipses. 38. —Inscriptional references: Lunar eclipses. 38. Solar eclipses.

##### 17. Phases of the Moon ... 241

1. Periodical appearance of the Moon. 2. Moon's luminosity. 3. Conditions of Moon's visibility. 4. Preliminaries for computation. 5. Visibility corrections: Ākṣa, Āyana and the Third. 6. Rising and setting of the Moon. 7. Moon's shadow. 8. Computation of Moon's cusps. 9. Moon's cusps—diagram.

##### 18. Heliacal rising and setting of Planets and Stars ... 254

1. Heliacal rising and setting of planets. 2. Days of rising and setting. 3. Planetary elongation for rising and setting. 4. Visibility corrections. 5. Computation of rising and setting. 6. Jupiter's rising and setting. 7. Venus: Rising and setting. 8. Rising and setting of a star. 9. Canopus: Rising.

##### 19. Conjunction of Planets ... 264

1. Types of planetary conjunctions. 2. Conjunction: Principle of computation. 3. Computation of conjunction.

##### 20. Conjunction of Stars and Planets ... 271

1. Conjunction of stars and planets. 2. Principle of planet-star conjunction. 3. Occultation of stars by planets. 4. Occultation of Rohiṇī by planets. 5. Occultation of stars by the Moon. 6. Time of star-planet conjunction.

#### V. INNOVATIVE TRENDS

##### 21. Novel Innovations ... 274

1. True longitude computation on the sphere of the zodiac. 2. Computation of True Moon. 3. Simplified astronomical procedures.

#### IV. OCCULTATION

##### 16. Eclipses ... 196

1. Cause stated in the Ṛgveda. 2. Cause of the lunar eclipse. 3. Lunar eclipse: Principle of computation. 4. Lunar eclipse computation: Vāsiṣṭha and Pauliṣa. 5. —Saurasiddhānta. 6. —Āryabhaṭīya. 7. —Āryabhaṭa's Midnight system. 8. —Emendation by Brahmagupta. 9. —Bhāskara I. 10. —Lalla. 11. —Bhāskara II. 12. —Karaṇaratna. 13. —Śrīpati. 14. —Vākyakaraṇa. 15. —Grahalāghava. 16. Lunar eclipse diagram: Vāsiṣṭha Pauliṣa. 17. —Āryabhaṭa's Midnight system. 18. —Bhāskara I. 19. —Lalla. 20. —Sūryasiddhānta. 21. —Bhāskara II. 22. —Karaṇaratna. 23. Solar eclipse: Computation: Pauliṣa. 24. —Romakasiddhānta. 25. —Saurasiddhānta. 26. —Āryabhaṭa's Midnight system. 27. —Bhāskara I. 28. —Lalla. 29. —Mahāsiddhānta. 30. —Bhāskara II. 31. —Karaṇaratna. 32. —Śrīpati. 33. —Grahalāghava. 34. —Solar eclipse diagram: Romakasiddhānta. 35. —Saurasiddhānta. 36. Colour of eclipses. 37. Conditions for non-prediction of eclipses. 38. —Inscriptional references: Lunar eclipses. 38. Solar eclipses.

##### 17. Phases of the Moon ... 241

1. Periodical appearance of the Moon. 2. Moon's luminosity. 3. Conditions of Moon's visibility. 4. Preliminaries for computation. 5. Visibility corrections: Ākṣa, Āyana and the Third. 6. Rising and setting of the Moon. 7. Moon's shadow. 8. Computation of Moon's cusps. 9. Moon's cusps—diagram.

##### 18. Heliacal rising and setting of Planets and Stars ... 254

1. Heliacal rising and setting of planets. 2. Days of rising and setting. 3. Planetary elongation for rising and setting. 4. Visibility corrections. 5. Computation of rising and setting. 6. Jupiter's rising and setting. 7. Venus: Rising and setting. 8. Rising and setting of a star. 9. Canopus: Rising.

##### 19. Conjunction of Planets ... 264

1. Types of planetary conjunctions. 2. Conjunction: Principle of computation. 3. Computation of conjunction.

##### 20. Conjunction of Stars and Planets ... 271

1. Conjunction of stars and planets. 2. Principle of planet-star conjunction. 3. Occultation of stars by planets. 4. Occultation of Rohiṇī by planets. 5. Occultation of stars by the Moon. 6. Time of star-planet conjunction.

#### V. INNOVATIVE TRENDS

##### 21. Novel Innovations ... 274

1. True longitude computation on the sphere of the zodiac. 2. Computation of True Moon. 3. Simplified astronomical procedures.

#### IV. OCCULTATION

##### 16. Eclipses ... 196

1. Cause stated in the Ṛgveda. 2. Cause of the lunar eclipse. 3. Lunar eclipse: Principle of computation. 4. Lunar eclipse computation: Vāsiṣṭha and Pauliṣa. 5. —Saurasiddhānta. 6. —Āryabhaṭīya. 7. —Āryabhaṭa's Midnight system. 8. —Emendation by Brahmagupta. 9. —Bhāskara I. 10. —Lalla. 11. —Bhāskara II. 12. —Karaṇaratna. 13. —Śrīpati. 14. —Vākyakaraṇa. 15. —Grahalāghava. 16. Lunar eclipse diagram: Vāsiṣṭha Pauliṣa. 17. —Āryabhaṭa's Midnight system. 18. —Bhāskara I. 19. —Lalla. 20. —Sūryasiddhānta. 21. —Bhāskara II. 22. —Karaṇaratna. 23. Solar eclipse: Computation: Pauliṣa. 24. —Romakasiddhānta. 25. —Saurasiddhānta. 26. —Āryabhaṭa's Midnight system. 27. —Bhāskara I. 28. —Lalla. 29. —Mahāsiddhānta. 30. —Bhāskara II. 31. —Karaṇaratna. 32. —Śrīpati. 33. —Grahalāghava. 34. —Solar eclipse diagram: Romakasiddhānta. 35. —Saurasiddhānta. 36. Colour of eclipses. 37. Conditions for non-prediction of eclipses. 38. —Inscriptional references: Lunar eclipses. 38. Solar eclipses.

##### 17. Phases of the Moon ... 241

1. Periodical appearance of the Moon. 2. Moon's luminosity. 3. Conditions of Moon's visibility. 4. Preliminaries for computation. 5. Visibility corrections: Ākṣa, Āyana and the Third. 6. Rising and setting of the Moon. 7. Moon's shadow. 8. Computation of Moon's cusps. 9. Moon's cusps—diagram.

##### 18. Heliacal rising and setting of Planets and Stars ... 254

1. Heliacal rising and setting of planets. 2. Days of rising and setting. 3. Planetary elongation for rising and setting. 4. Visibility corrections. 5. Computation of rising and setting. 6. Jupiter's rising and setting. 7. Venus: Rising and setting. 8. Rising and setting of a star. 9. Canopus: Rising.

##### 19. Conjunction of Planets ... 264

1. Types of planetary conjunctions. 2. Conjunction: Principle of computation. 3. Computation of conjunction.

##### 20. Conjunction of Stars and Planets ... 271

1. Conjunction of stars and planets. 2. Principle of planet-star conjunction. 3. Occultation of stars by planets. 4. Occultation of Rohiṇī by planets. 5. Occultation of stars by the Moon. 6. Time of star-planet conjunction.

#### V. INNOVATIVE TRENDS

##### 21. Novel Innovations ... 274

1. True longitude computation on the sphere of the zodiac. 2. Computation of True Moon. 3. Simplified astronomical procedures.

#### IV. OCCULTATION

##### 16. Eclipses ... 196

1. Cause stated in the Ṛgveda. 2. Cause of the lunar eclipse. 3. Lunar eclipse: Principle of computation. 4. Lunar eclipse computation: Vāsiṣṭha and Pauliṣa. 5. —Saurasiddhānta. 6. —Āryabhaṭīya. 7. —Āryabhaṭa's Midnight system. 8. —Emendation by Brahmagupta. 9. —Bhāskara I. 10. —Lalla. 11. —Bhāskara II. 12. —Karaṇaratna. 13. —Śrīpati. 14. —Vākyakaraṇa. 15. —Grahalāghava. 16. Lunar eclipse diagram: Vāsiṣṭha Pauliṣa. 17. —Āryabhaṭa's Midnight system. 18. —Bhāskara I. 19. —Lalla. 20. —Sūryasiddhānta. 21. —Bhāskara II. 22. —Karaṇaratna. 23. Solar eclipse: Computation: Pauliṣa. 24. —Romakasiddhānta. 25. —Saurasiddhānta. 26. —Āryabhaṭa's Midnight system. 27. —Bhāskara I. 28. —Lalla. 29. —Mahāsiddhānta. 30. —Bhāskara II. 31. —Karaṇaratna. 32. —Śrīpati. 33. —Grahalāghava. 34. —Solar eclipse diagram: Romakasiddhānta. 35. —Saurasiddhānta. 36. Colour of eclipses. 37. Conditions for non-prediction of eclipses. 38. —Inscriptional references: Lunar eclipses. 38. Solar eclipses.

##### 17. Phases of the Moon ... 241

1. Periodical appearance of the Moon. 2. Moon's luminosity. 3. Conditions of Moon's visibility. 4. Preliminaries for computation. 5. Visibility corrections: Ākṣa, Āyana and the Third. 6. Rising and setting of the Moon. 7. Moon's shadow. 8. Computation of Moon's cusps. 9. Moon's cusps—diagram.

##### 18. Heliacal rising and setting of Planets and Stars ... 254

1. Heliacal rising and setting of planets. 2. Days of rising and setting. 3. Planetary elongation for rising and setting. 4. Visibility corrections. 5. Computation of rising and setting. 6. Jupiter's rising and setting. 7. Venus: Rising and setting. 8. Rising and setting of a star. 9. Canopus: Rising.

##### 19. Conjunction of Planets ... 264

1. Types of planetary conjunctions. 2. Conjunction: Principle of computation. 3. Computation of conjunction.

##### 20. Conjunction of Stars and Planets ... 271

1. Conjunction of stars and planets. 2. Principle of planet-star conjunction. 3. Occultation of stars by planets. 4. Occultation of Rohiṇī by planets. 5. Occultation of stars by the Moon. 6. Time of star-planet conjunction.

#### V. INNOVATIVE TRENDS

##### 21. Novel Innovations ... 274

1. True longitude computation on the sphere of the zodiac. 2. Computation of True Moon. 3. Simplified astronomical procedures.



#### IV. OCCULTATION

##### 16. Eclipses ... 196

1. Cause stated in the Ṛgveda. 2. Cause of the lunar eclipse. 3. Lunar eclipse: Principle of computation. 4. Lunar eclipse computation: Vāsiṣṭha and Pauliṣa. 5. —Saurasiddhānta. 6. —Āryabhaṭīya. 7. —Āryabhaṭa's Midnight system. 8. —Emendation by Brahmagupta. 9. —Bhāskara I. 10. —Lalla. 11. —Bhāskara II. 12. —Karaṇaratna. 13. —Śrīpati. 14. —Vākyakaraṇa. 15. —Grahalāghava. 16. Lunar eclipse diagram: Vāsiṣṭha Pauliṣa. 17. —Āryabhaṭa's Midnight system. 18. —Bhāskara I. 19. —Lalla. 20. —Sūryasiddhānta. 21. —Bhāskara II. 22. —Karaṇaratna. 23. Solar eclipse: Computation: Pauliṣa. 24. —Romakasiddhānta. 25. —Saurasiddhānta. 26. —Āryabhaṭa's Midnight system. 27. —Bhāskara I. 28. —Lalla. 29. —Mahāsiddhānta. 30. —Bhāskara II. 31. —Karaṇaratna. 32. —Śrīpati. 33. —Grahalāghava. 34. —Solar eclipse diagram: Romakasiddhānta. 35. —Saurasiddhānta. 36. Colour of eclipses. 37. Conditions for non-prediction of eclipses. 38. —Inscriptional references: Lunar eclipses. 38. Solar eclipses.

##### 17. Phases of the Moon ... 241

1. Periodical appearance of the Moon. 2. Moon's luminosity. 3. Conditions of Moon's visibility. 4. Preliminaries for computation. 5. Visibility corrections: Ākṣa, Āyana and the Third. 6. Rising and setting of the Moon. 7. Moon's shadow. 8. Computation of Moon's cusps. 9. Moon's cusps—diagram.

##### 18. Heliacal rising and setting of Planets and Stars ... 254

1. Heliacal rising and setting of planets. 2. Days of rising and setting. 3. Planetary elongation for rising and setting. 4. Visibility corrections. 5. Computation of rising and setting. 6. Jupiter's rising and setting. 7. Venus: Rising and setting. 8. Rising and setting of a star. 9. Canopus: Rising.

##### 19. Conjunction of Planets ... 264

1. Types of planetary conjunctions. 2. Conjunction: Principle of computation. 3. Computation of conjunction.

##### 20. Conjunction of Stars and Planets ... 271

1. Conjunction of stars and planets. 2. Principle of planet-star conjunction. 3. Occultation of stars by planets. 4. Occultation of Rohiṇī by planets. 5. Occultation of stars by the Moon. 6. Time of star-planet conjunction.

#### V. INNOVATIVE TRENDS

##### 21. Novel Innovations ... 274

1. True longitude computation on the sphere of the zodiac. 2. Computation of True Moon. 3. Simplified astronomical procedures.

#### IV. OCCULTATION

##### 16. Eclipses ... 196

1. Cause stated in the Ṛgveda. 2. Cause of the lunar eclipse. 3. Lunar eclipse: Principle of computation. 4. Lunar eclipse computation: Vāsiṣṭha and Pauliṣa. 5. —Saurasiddhānta. 6. —Āryabhaṭīya. 7. —Āryabhaṭa's Midnight system. 8. —Emendation by Brahmagupta. 9. —Bhāskara I. 10. —Lalla. 11. —Bhāskara II. 12. —Karaṇaratna. 13. —Śrīpati. 14. —Vākyakaraṇa. 15. —Grahalāghava. 16. Lunar eclipse diagram: Vāsiṣṭha Pauliṣa. 17. —Āryabhaṭa's Midnight system. 18. —Bhāskara I. 19. —Lalla. 20. —Sūryasiddhānta. 21. —Bhāskara II. 22. —Karaṇaratna. 23. Solar eclipse: Computation: Pauliṣa. 24. —Romakasiddhānta. 25. —Saurasiddhānta. 26. —Āryabhaṭa's Midnight system. 27. —Bhāskara I. 28. —Lalla. 29. —Mahāsiddhānta. 30. —Bhāskara II. 31. —Karaṇaratna. 32. —Śrīpati. 33. —Grahalāghava. 34. —Solar eclipse diagram: Romakasiddhānta. 35. —Saurasiddhānta. 36. Colour of eclipses. 37. Conditions for non-prediction of eclipses. 38. —Inscriptional references: Lunar eclipses. 38. Solar eclipses.

##### 17. Phases of the Moon ... 241

1. Periodical appearance of the Moon. 2. Moon's luminosity. 3. Conditions of Moon's visibility. 4. Preliminaries for computation. 5. Visibility corrections: Ākṣa, Āyana and the Third. 6. Rising and setting of the Moon. 7. Moon's shadow. 8. Computation of Moon's cusps. 9. Moon's cusps—diagram.

##### 18. Heliacal rising and setting of Planets and Stars ... 254

1. Heliacal rising and setting of planets. 2. Days of rising and setting. 3. Planetary elongation for rising and setting. 4. Visibility corrections. 5. Computation of rising and setting. 6. Jupiter's rising and setting. 7. Venus: Rising and setting. 8. Rising and setting of a star. 9. Canopus: Rising.

##### 19. Conjunction of Planets ... 264

1. Types of planetary conjunctions. 2. Conjunction: Principle of computation. 3. Computation of conjunction.

##### 20. Conjunction of Stars and Planets ... 271

1. Conjunction of stars and planets. 2. Principle of planet-star conjunction. 3. Occultation of stars by planets. 4. Occultation of Rohiṇī by planets. 5. Occultation of stars by the Moon. 6. Time of star-planet conjunction.

#### V. INNOVATIVE TRENDS

##### 21. Novel Innovations ... 274

1. True longitude computation on the sphere of the zodiac. 2. Computation of True Moon. 3. Simplified astronomical procedures.

#### IV. OCCULTATION

##### 16. Eclipses ... 196

1. Cause stated in the Ṛgveda. 2. Cause of the lunar eclipse. 3. Lunar eclipse: Principle of computation. 4. Lunar eclipse computation: Vāsiṣṭha and Pauliṣa. 5. —Saurasiddhānta. 6. —Āryabhaṭīya. 7. —Āryabhaṭa's Midnight system. 8. —Emendation by Brahmagupta. 9. —Bhāskara I. 10. —Lalla. 11. —Bhāskara II. 12. —Karaṇaratna. 13. —Śrīpati. 14. —Vākyakaraṇa. 15. —Grahalāghava. 16. Lunar eclipse diagram: Vāsiṣṭha Pauliṣa. 17. —Āryabhaṭa's Midnight system. 18. —Bhāskara I. 19. —Lalla. 20. —Sūryasiddhānta. 21. —Bhāskara II. 22. —Karaṇaratna. 23. Solar eclipse: Computation: Pauliṣa. 24. —Romakasiddhānta. 25. —Saurasiddhānta. 26. —Āryabhaṭa's Midnight system. 27. —Bhāskara I. 28. —Lalla. 29. —Mahāsiddhānta. 30. —Bhāskara II. 31. —Karaṇaratna. 32. —Śrīpati. 33. —Grahalāghava. 34. —Solar eclipse diagram: Romakasiddhānta. 35. —Saurasiddhānta. 36. Colour of eclipses. 37. Conditions for non-prediction of eclipses. 38. —Inscriptional references: Lunar eclipses. 38. Solar eclipses.

##### 17. Phases of the Moon ... 241

1. Periodical appearance of the Moon. 2. Moon's luminosity. 3. Conditions of Moon's visibility. 4. Preliminaries for computation. 5. Visibility corrections: Ākṣa, Āyana and the Third. 6. Rising and setting of the Moon. 7. Moon's shadow. 8. Computation of Moon's cusps. 9. Moon's cusps—diagram.

##### 18. Heliacal rising and setting of Planets and Stars ... 254

1. Heliacal rising and setting of planets. 2. Days of rising and setting. 3. Planetary elongation for rising and setting. 4. Visibility corrections. 5. Computation of rising and setting. 6. Jupiter's rising and setting. 7. Venus: Rising and setting. 8. Rising and setting of a star. 9. Canopus: Rising.

##### 19. Conjunction of Planets ... 264

1. Types of planetary conjunctions. 2. Conjunction: Principle of computation. 3. Computation of conjunction.

##### 20. Conjunction of Stars and Planets ... 271

1. Conjunction of stars and planets. 2. Principle of planet-star conjunction. 3. Occultation of stars by planets. 4. Occultation of Rohiṇī by planets. 5. Occultation of stars by the Moon. 6. Time of star-planet conjunction.

#### V. INNOVATIVE TRENDS

##### 21. Novel Innovations ... 274

1. True longitude computation on the sphere of the zodiac. 2. Computation of True Moon. 3. Simplified astronomical procedures.

#### IV. OCCULTATION

##### 16. Eclipses ... 196

1. Cause stated in the Ṛgveda. 2. Cause of the lunar eclipse. 3. Lunar eclipse: Principle of computation. 4. Lunar eclipse computation: Vāsiṣṭha and Pauliṣa. 5. —Saurasiddhānta. 6. —Āryabhaṭīya. 7. —Āryabhaṭa's Midnight system. 8. —Emendation by Brahmagupta. 9. —Bhāskara I. 10. —Lalla. 11. —Bhāskara II. 12. —Karaṇaratna. 13. —Śrīpati. 14. —Vākyakaraṇa. 15. —Grahalāghava. 16. Lunar eclipse diagram: Vāsiṣṭha Pauliṣa. 17. —Āryabhaṭa's Midnight system. 18. —Bhāskara I. 19. —Lalla. 20. —Sūryasiddhānta. 21. —Bhāskara II. 22. —Karaṇaratna. 23. Solar eclipse: Computation: Pauliṣa. 24. —Romakasiddhānta. 25. —Saurasiddhānta. 26. —Āryabhaṭa's Midnight system. 27. —Bhāskara I. 28. —Lalla. 29. —Mahāsiddhānta. 30. —Bhāskara II. 31. —Karaṇaratna. 32. —Śrīpati. 33. —Grahalāghava. 34. —Solar eclipse diagram: Romakasiddhānta. 35. —Saurasiddhānta. 36. Colour of eclipses. 37. Conditions for non-prediction of eclipses. 38. —Inscriptional references: Lunar eclipses. 38. Solar eclipses.

##### 17. Phases of the Moon ... 241

1. Periodical appearance of the Moon. 2. Moon's luminosity. 3. Conditions of Moon's visibility. 4. Preliminaries for computation. 5. Visibility corrections: Ākṣa, Āyana and the Third. 6. Rising and setting of the Moon. 7. Moon's shadow. 8. Computation of Moon's cusps. 9. Moon's cusps—diagram.

##### 18. Heliacal rising and setting of Planets and Stars ... 254

1. Heliacal rising and setting of planets. 2. Days of rising and setting. 3. Planetary elongation for rising and setting. 4. Visibility corrections. 5. Computation of rising and setting. 6. Jupiter's rising and setting. 7. Venus: Rising and setting. 8. Rising and setting of a star. 9. Canopus: Rising.

##### 19. Conjunction of Planets ... 264

1. Types of planetary conjunctions. 2. Conjunction: Principle of computation. 3. Computation of conjunction.

##### 20. Conjunction of Stars and Planets ... 271

1. Conjunction of stars and planets. 2. Principle of planet-star conjunction. 3. Occultation of stars by planets. 4. Occultation of Rohiṇī by planets. 5. Occultation of stars by the Moon. 6. Time of star-planet conjunction.

#### V. INNOVATIVE TRENDS

##### 21. Novel Innovations ... 274

1. True longitude computation on the sphere of the zodiac. 2. Computation of True Moon. 3. Simplified astronomical procedures.

#### IV. OCCULTATION

##### 16. Eclipses ... 196

1. Cause stated in the Ṛgveda. 2. Cause of the lunar eclipse. 3. Lunar eclipse: Principle of computation. 4. Lunar eclipse computation: Vāsiṣṭha and Pauliṣa. 5. —Saurasiddhānta. 6. —Āryabhaṭīya. 7. —Āryabhaṭa's Midnight system. 8. —Emendation by Brahmagupta. 9. —Bhāskara I. 10. —Lalla. 11. —Bhāskara II. 12. —Karaṇaratna. 13. —Śrīpati. 14. —Vākyakaraṇa. 15. —Grahalāghava. 16. Lunar eclipse diagram: Vāsiṣṭha Pauliṣa. 17. —Āryabhaṭa's Midnight system. 18. —Bhāskara I. 19. —Lalla. 20. —Sūryasiddhānta. 21. —Bhāskara II. 22. —Karaṇaratna. 23. Solar eclipse: Computation: Pauliṣa. 24. —Romakasiddhānta. 25. —Saurasiddhānta. 26. —Āryabhaṭa's Midnight system. 27. —Bhāskara I. 28. —Lalla. 29. —Mahāsiddhānta. 30. —Bhāskara II. 31. —Karaṇaratna. 32. —Śrīpati. 33. —Grahalāghava. 34. —Solar eclipse diagram: Romakasiddhānta. 35. —Saurasiddhānta. 36. Colour of eclipses. 37. Conditions for non-prediction of eclipses. 38. —Inscriptional references: Lunar eclipses. 38. Solar eclipses.

##### 17. Phases of the Moon ... 241

1. Periodical appearance of the Moon. 2. Moon's luminosity. 3. Conditions of Moon's visibility. 4. Preliminaries for computation. 5. Visibility corrections: Ākṣa, Āyana and the Third. 6. Rising and setting of the Moon. 7. Moon's shadow. 8. Computation of Moon's cusps. 9. Moon's cusps—diagram.

##### 18. Heliacal rising and setting of Planets and Stars ... 254

1. Heliacal rising and setting of planets. 2. Days of rising and setting. 3. Planetary elongation for rising and setting. 4. Visibility corrections. 5. Computation of rising and setting. 6. Jupiter's rising and setting. 7. Venus: Rising and setting. 8. Rising and setting of a star. 9. Canopus: Rising.

##### 19. Conjunction of Planets ... 264

1. Types of planetary conjunctions. 2. Conjunction: Principle of computation. 3. Computation of conjunction.

##### 20. Conjunction of Stars and Planets ... 271

1. Conjunction of stars and planets. 2. Principle of planet-star conjunction. 3. Occultation of stars by planets. 4. Occultation of Rohiṇī by planets. 5. Occultation of stars by the Moon. 6. Time of star-planet conjunction.

#### V. INNOVATIVE TRENDS

##### 21. Novel Innovations ... 274

1. True longitude computation on the sphere of the zodiac. 2. Computation of True Moon. 3. Simplified astronomical procedures.

#### IV. OCCULTATION

##### 16. Eclipses ... 196

1. Cause stated in the Ṛgveda. 2. Cause of the lunar eclipse. 3. Lunar eclipse: Principle of computation. 4. Lunar eclipse computation: Vāsiṣṭha and Pauliṣa. 5. —Saurasiddhānta. 6. —Āryabhaṭīya. 7. —Āryabhaṭa's Midnight system. 8. —Emendation by Brahmagupta. 9. —Bhāskara I. 10. —Lalla. 11. —Bhāskara II. 12. —Karaṇaratna. 13. —Śrīpati. 14. —Vākyakaraṇa. 15. —Grahalāghava. 16. Lunar eclipse diagram: Vāsiṣṭha Pauliṣa. 17. —Āryabhaṭa's Midnight system. 18. —Bhāskara I. 19. —Lalla. 20. —Sūryasiddhānta. 21. —Bhāskara II. 22. —Karaṇaratna. 23. Solar eclipse: Computation: Pauliṣa. 24. —Romakasiddhānta. 25. —Saurasiddhānta. 26. —Āryabhaṭa's Midnight system. 27. —Bhāskara I. 28. —Lalla. 29. —Mahāsiddhānta. 30. —Bhāskara II. 31. —Karaṇaratna. 32. —Śrīpati. 33. —Grahalāghava. 34. —Solar eclipse diagram: Romakasiddhānta. 35. —Saurasiddhānta. 36. Colour of eclipses. 37. Conditions for non-prediction of eclipses. 38. —Inscriptional references: Lunar eclipses. 38. Solar eclipses.

##### 17. Phases of the Moon ... 241

1. Periodical appearance of the Moon. 2. Moon's luminosity. 3. Conditions of Moon's visibility. 4. Preliminaries for computation. 5. Visibility corrections: Ākṣa, Āyana and the Third. 6. Rising and setting of the Moon. 7. Moon's shadow. 8. Computation of Moon's cusps. 9. Moon's cusps—diagram.

##### 18. Heliacal rising and setting of Planets and Stars ... 254

1. Heliacal rising and setting of planets. 2. Days of rising and setting. 3. Planetary elongation for rising and setting. 4. Visibility corrections. 5. Computation of rising and setting. 6. Jupiter's rising and setting. 7. Venus: Rising and setting. 8. Rising and setting of a star. 9. Canopus: Rising.

##### 19. Conjunction of Planets ... 264

1. Types of planetary conjunctions. 2. Conjunction: Principle of computation. 3. Computation of conjunction.

##### 20. Conjunction of Stars and Planets ... 271

1. Conjunction of stars and planets. 2. Principle of planet-star conjunction. 3. Occultation of stars by planets. 4. Occultation of Rohiṇī by planets. 5. Occultation of stars by the Moon. 6. Time of star-planet conjunction.

#### V. INNOVATIVE TRENDS

##### 21. Novel Innovations ... 274

1. True longitude computation on the sphere of the zodiac. 2. Computation of True Moon. 3. Simplified astronomical procedures.



#### IV. OCCULTATION

##### 16. Eclipses ... 196

1. Cause stated in the Ṛgveda. 2. Cause of the lunar eclipse. 3. Lunar eclipse: Principle of computation. 4. Lunar eclipse computation: Vāsiṣṭha and Pauliṣa. 5. —Saurasiddhānta. 6. —Āryabhaṭīya. 7. —Āryabhaṭa's Midnight system. 8. —Emendation by Brahmagupta. 9. —Bhāskara I. 10. —Lalla. 11. —Bhāskara II. 12. —Karaṇaratna. 13. —Śrīpati. 14. —Vākyakaraṇa. 15. —Grahalāghava. 16. Lunar eclipse diagram: Vāsiṣṭha Pauliṣa. 17. —Āryabhaṭa's Midnight system. 18. —Bhāskara I. 19. —Lalla. 20. —Sūryasiddhānta. 21. —Bhāskara II. 22. —Karaṇaratna. 23. Solar eclipse: Computation: Pauliṣa. 24. —Romakasiddhānta. 25. —Saurasiddhānta. 26. —Āryabhaṭa's Midnight system. 27. —Bhāskara I. 28. —Lalla. 29. —Mahāsiddhānta. 30. —Bhāskara II. 31. —Karaṇaratna. 32. —Śrīpati. 33. —Grahalāghava. 34. —Solar eclipse diagram: Romakasiddhānta. 35. —Saurasiddhānta. 36. Colour of eclipses. 37. Conditions for non-prediction of eclipses. 38. —Inscriptional references: Lunar eclipses. 38. Solar eclipses.

##### 17. Phases of the Moon ... 241

1. Periodical appearance of the Moon. 2. Moon's luminosity. 3. Conditions of Moon's visibility. 4. Preliminaries for computation. 5. Visibility corrections: Ākṣa, Āyana and the Third. 6. Rising and setting of the Moon. 7. Moon's shadow. 8. Computation of Moon's cusps. 9. Moon's cusps—diagram.

##### 18. Heliacal rising and setting of Planets and Stars ... 254

1. Heliacal rising and setting of planets. 2. Days of rising and setting. 3. Planetary elongation for rising and setting. 4. Visibility corrections. 5. Computation of rising and setting. 6. Jupiter's rising and setting. 7. Venus: Rising and setting. 8. Rising and setting of a star. 9. Canopus: Rising.

##### 19. Conjunction of Planets ... 264

1. Types of planetary conjunctions. 2. Conjunction: Principle of computation. 3. Computation of conjunction.

##### 20. Conjunction of Stars and Planets ... 271

1. Conjunction of stars and planets. 2. Principle of planet-star conjunction. 3. Occultation of stars by planets. 4. Occultation of Rohiṇī by planets. 5. Occultation of stars by the Moon. 6. Time of star-planet conjunction.

#### V. INNOVATIVE TRENDS

##### 21. Novel Innovations ... 274

1. True longitude computation on the sphere of the zodiac. 2. Computation of True Moon. 3. Simplified astronomical procedures.

#### IV. OCCULTATION

##### 16. Eclipses ... 196

1. Cause stated in the Ṛgveda. 2. Cause of the lunar eclipse. 3. Lunar eclipse: Principle of computation. 4. Lunar eclipse computation: Vāsiṣṭha and Pauliṣa. 5. —Saurasiddhānta. 6. —Āryabhaṭīya. 7. —Āryabhaṭa's Midnight system. 8. —Emendation by Brahmagupta. 9. —Bhāskara I. 10. —Lalla. 11. —Bhāskara II. 12. —Karaṇaratna. 13. —Śrīpati. 14. —Vākyakaraṇa. 15. —Grahalāghava. 16. Lunar eclipse diagram: Vāsiṣṭha Pauliṣa. 17. —Āryabhaṭa's Midnight system. 18. —Bhāskara I. 19. —Lalla. 20. —Sūryasiddhānta. 21. —Bhāskara II. 22. —Karaṇaratna. 23. Solar eclipse: Computation: Pauliṣa. 24. —Romakasiddhānta. 25. —Saurasiddhānta. 26. —Āryabhaṭa's Midnight system. 27. —Bhāskara I. 28. —Lalla. 29. —Mahāsiddhānta. 30. —Bhāskara II. 31. —Karaṇaratna. 32. —Śrīpati. 33. —Grahalāghava. 34. —Solar eclipse diagram: Romakasiddhānta. 35. —Saurasiddhānta. 36. Colour of eclipses. 37. Conditions for non-prediction of eclipses. 38. —Inscriptional references: Lunar eclipses. 38. Solar eclipses.

##### 17. Phases of the Moon ... 241

1. Periodical appearance of the Moon. 2. Moon's luminosity. 3. Conditions of Moon's visibility. 4. Preliminaries for computation. 5. Visibility corrections: Ākṣa, Āyana and the Third. 6. Rising and setting of the Moon. 7. Moon's shadow. 8. Computation of Moon's cusps. 9. Moon's cusps—diagram.

##### 18. Heliacal rising and setting of Planets and Stars ... 254

1. Heliacal rising and setting of planets. 2. Days of rising and setting. 3. Planetary elongation for rising and setting. 4. Visibility corrections. 5. Computation of rising and setting. 6. Jupiter's rising and setting. 7. Venus: Rising and setting. 8. Rising and setting of a star. 9. Canopus: Rising.

##### 19. Conjunction of Planets ... 264

1. Types of planetary conjunctions. 2. Conjunction: Principle of computation. 3. Computation of conjunction.

##### 20. Conjunction of Stars and Planets ... 271

1. Conjunction of stars and planets. 2. Principle of planet-star conjunction. 3. Occultation of stars by planets. 4. Occultation of Rohiṇī by planets. 5. Occultation of stars by the Moon. 6. Time of star-planet conjunction.

#### V. INNOVATIVE TRENDS

##### 21. Novel Innovations ... 274

1. True longitude computation on the sphere of the zodiac. 2. Computation of True Moon. 3. Simplified astronomical procedures.

#### IV. OCCULTATION

##### 16. Eclipses ... 196

1. Cause stated in the Ṛgveda. 2. Cause of the lunar eclipse. 3. Lunar eclipse: Principle of computation. 4. Lunar eclipse computation: Vāsiṣṭha and Pauliṣa. 5. —Saurasiddhānta. 6. —Āryabhaṭīya. 7. —Āryabhaṭa's Midnight system. 8. —Emendation by Brahmagupta. 9. —Bhāskara I. 10. —Lalla. 11. —Bhāskara II. 12. —Karaṇaratna. 13. —Śrīpati. 14. —Vākyakaraṇa. 15. —Grahalāghava. 16. Lunar eclipse diagram: Vāsiṣṭha Pauliṣa. 17. —Āryabhaṭa's Midnight system. 18. —Bhāskara I. 19. —Lalla. 20. —Sūryasiddhānta. 21. —Bhāskara II. 22. —Karaṇaratna. 23. Solar eclipse: Computation: Pauliṣa. 24. —Romakasiddhānta. 25. —Saurasiddhānta. 26. —Āryabhaṭa's Midnight system. 27. —Bhāskara I. 28. —Lalla. 29. —Mahāsiddhānta. 30. —Bhāskara II. 31. —Karaṇaratna. 32. —Śrīpati. 33. —Grahalāghava. 34. —Solar eclipse diagram: Romakasiddhānta. 35. —Saurasiddhānta. 36. Colour of eclipses. 37. Conditions for non-prediction of eclipses. 38. —Inscriptional references: Lunar eclipses. 38. Solar eclipses.

##### 17. Phases of the Moon ... 241

1. Periodical appearance of the Moon. 2. Moon's luminosity. 3. Conditions of Moon's visibility. 4. Preliminaries for computation. 5. Visibility corrections: Ākṣa, Āyana and the Third. 6. Rising and setting of the Moon. 7. Moon's shadow. 8. Computation of Moon's cusps. 9. Moon's cusps—diagram.

##### 18. Heliacal rising and setting of Planets and Stars ... 254

1. Heliacal rising and setting of planets. 2. Days of rising and setting. 3. Planetary elongation for rising and setting. 4. Visibility corrections. 5. Computation of rising and setting. 6. Jupiter's rising and setting. 7. Venus: Rising and setting. 8. Rising and setting of a star. 9. Canopus: Rising.

##### 19. Conjunction of Planets ... 264

1. Types of planetary conjunctions. 2. Conjunction: Principle of computation. 3. Computation of conjunction.

##### 20. Conjunction of Stars and Planets ... 271

1. Conjunction of stars and planets. 2. Principle of planet-star conjunction. 3. Occultation of stars by planets. 4. Occultation of Rohiṇī by planets. 5. Occultation of stars by the Moon. 6. Time of star-planet conjunction.

#### V. INNOVATIVE TRENDS

##### 21. Novel Innovations ... 274

1. True longitude computation on the sphere of the zodiac. 2. Computation of True Moon. 3. Simplified astronomical procedures.

#### IV. OCCULTATION

##### 16. Eclipses ... 196

1. Cause stated in the Ṛgveda. 2. Cause of the lunar eclipse. 3. Lunar eclipse: Principle of computation. 4. Lunar eclipse computation: Vāsiṣṭha and Pauliṣa. 5. —Saurasiddhānta. 6. —Āryabhaṭīya. 7. —Āryabhaṭa's Midnight system. 8. —Emendation by Brahmagupta. 9. —Bhāskara I. 10. —Lalla. 11. —Bhāskara II. 12. —Karaṇaratna. 13. —Śrīpati. 14. —Vākyakaraṇa. 15. —Grahalāghava. 16. Lunar eclipse diagram: Vāsiṣṭha Pauliṣa. 17. —Āryabhaṭa's Midnight system. 18. —Bhāskara I. 19. —Lalla. 20. —Sūryasiddhānta. 21. —Bhāskara II. 22. —Karaṇaratna. 23. Solar eclipse: Computation: Pauliṣa. 24. —Romakasiddhānta. 25. —Saurasiddhānta. 26. —Āryabhaṭa's Midnight system. 27. —Bhāskara I. 28. —Lalla. 29. —Mahāsiddhānta. 30. —Bhāskara II. 31. —Karaṇaratna. 32. —Śrīpati. 33. —Grahalāghava. 34. —Solar eclipse diagram: Romakasiddhānta. 35. —Saurasiddhānta. 36. Colour of eclipses. 37. Conditions for non-prediction of eclipses. 38. —Inscriptional references: Lunar eclipses. 38. Solar eclipses.

##### 17. Phases of the Moon ... 241

1. Periodical appearance of the Moon. 2. Moon's luminosity. 3. Conditions of Moon's visibility. 4. Preliminaries for computation. 5. Visibility corrections: Ākṣa, Āyana and the Third. 6. Rising and setting of the Moon. 7. Moon's shadow. 8. Computation of Moon's cusps. 9. Moon's cusps—diagram.

##### 18. Heliacal rising and setting of Planets and Stars ... 254

1. Heliacal rising and setting of planets. 2. Days of rising and setting. 3. Planetary elongation for rising and setting. 4. Visibility corrections. 5. Computation of rising and setting. 6. Jupiter's rising and setting. 7. Venus: Rising and setting. 8. Rising and setting of a star. 9. Canopus: Rising.

##### 19. Conjunction of Planets ... 264

1. Types of planetary conjunctions. 2. Conjunction: Principle of computation. 3. Computation of conjunction.

##### 20. Conjunction of Stars and Planets ... 271

1. Conjunction of stars and planets. 2. Principle of planet-star conjunction. 3. Occultation of stars by planets. 4. Occultation of Rohiṇī by planets. 5. Occultation of stars by the Moon. 6. Time of star-planet conjunction.

#### V. INNOVATIVE TRENDS

##### 21. Novel Innovations ... 274

1. True longitude computation on the sphere of the zodiac. 2. Computation of True Moon. 3. Simplified astronomical procedures.

#### IV. OCCULTATION

##### 16. Eclipses ... 196

1. Cause stated in the Ṛgveda. 2. Cause of the lunar eclipse. 3. Lunar eclipse: Principle of computation. 4. Lunar eclipse computation: Vāsiṣṭha and Pauliṣa. 5. —Saurasiddhānta. 6. —Āryabhaṭīya. 7. —Āryabhaṭa's Midnight system. 8. —Emendation by Brahmagupta. 9. —Bhāskara I. 10. —Lalla. 11. —Bhāskara II. 12. —Karaṇaratna. 13. —Śrīpati. 14. —Vākyakaraṇa. 15. —Grahalāghava. 16. Lunar eclipse diagram: Vāsiṣṭha Pauliṣa. 17. —Āryabhaṭa's Midnight system. 18. —Bhāskara I. 19. —Lalla. 20. —Sūryasiddhānta. 21. —Bhāskara II. 22. —Karaṇaratna. 23. Solar eclipse: Computation: Pauliṣa. 24. —Romakasiddhānta. 25. —Saurasiddhānta. 26. —Āryabhaṭa's Midnight system. 27. —Bhāskara I. 28. —Lalla. 29. —Mahāsiddhānta. 30. —Bhāskara II. 31. —Karaṇaratna. 32. —Śrīpati. 33. —Grahalāghava. 34. —Solar eclipse diagram: Romakasiddhānta. 35. —Saurasiddhānta. 36. Colour of eclipses. 37. Conditions for non-prediction of eclipses. 38. —Inscriptional references: Lunar eclipses. 38. Solar eclipses.

##### 17. Phases of the Moon ... 241

1. Periodical appearance of the Moon. 2. Moon's luminosity. 3. Conditions of Moon's visibility. 4. Preliminaries for computation. 5. Visibility corrections: Ākṣa, Āyana and the Third. 6. Rising and setting of the Moon. 7. Moon's shadow. 8. Computation of Moon's cusps. 9. Moon's cusps—diagram.

##### 18. Heliacal rising and setting of Planets and Stars ... 254

1. Heliacal rising and setting of planets. 2. Days of rising and setting. 3. Planetary elongation for rising and setting. 4. Visibility corrections. 5. Computation of rising and setting. 6. Jupiter's rising and setting. 7. Venus: Rising and setting. 8. Rising and setting of a star. 9. Canopus: Rising.

##### 19. Conjunction of Planets ... 264

1. Types of planetary conjunctions. 2. Conjunction: Principle of computation. 3. Computation of conjunction.

##### 20. Conjunction of Stars and Planets ... 271

1. Conjunction of stars and planets. 2. Principle of planet-star conjunction. 3. Occultation of stars by planets. 4. Occultation of Rohiṇī by planets. 5. Occultation of stars by the Moon. 6. Time of star-planet conjunction.

#### V. INNOVATIVE TRENDS

##### 21. Novel Innovations ... 274

1. True longitude computation on the sphere of the zodiac. 2. Computation of True Moon. 3. Simplified astronomical procedures.

#### IV. OCCULTATION

##### 16. Eclipses ... 196

1. Cause stated in the Ṛgveda. 2. Cause of the lunar eclipse. 3. Lunar eclipse: Principle of computation. 4. Lunar eclipse computation: Vāsiṣṭha and Pauliṣa. 5. —Saurasiddhānta. 6. —Āryabhaṭīya. 7. —Āryabhaṭa's Midnight system. 8. —Emendation by Brahmagupta. 9. —Bhāskara I. 10. —Lalla. 11. —Bhāskara II. 12. —Karaṇaratna. 13. —Śrīpati. 14. —Vākyakaraṇa. 15. —Grahalāghava. 16. Lunar eclipse diagram: Vāsiṣṭha Pauliṣa. 17. —Āryabhaṭa's Midnight system. 18. —Bhāskara I. 19. —Lalla. 20. —Sūryasiddhānta. 21. —Bhāskara II. 22. —Karaṇaratna. 23. Solar eclipse: Computation: Pauliṣa. 24. —Romakasiddhānta. 25. —Saurasiddhānta. 26. —Āryabhaṭa's Midnight system. 27. —Bhāskara I. 28. —Lalla. 29. —Mahāsiddhānta. 30. —Bhāskara II. 31. —Karaṇaratna. 32. —Śrīpati. 33. —Grahalāghava. 34. —Solar eclipse diagram: Romakasiddhānta. 35. —Saurasiddhānta. 36. Colour of eclipses. 37. Conditions for non-prediction of eclipses. 38. —Inscriptional references: Lunar eclipses. 38. Solar eclipses.

##### 17. Phases of the Moon ... 241

1. Periodical appearance of the Moon. 2. Moon's luminosity. 3. Conditions of Moon's visibility. 4. Preliminaries for computation. 5. Visibility corrections: Ākṣa, Āyana and the Third. 6. Rising and setting of the Moon. 7. Moon's shadow. 8. Computation of Moon's cusps. 9. Moon's cusps—diagram.

##### 18. Heliacal rising and setting of Planets and Stars ... 254

1. Heliacal rising and setting of planets. 2. Days of rising and setting. 3. Planetary elongation for rising and setting. 4. Visibility corrections. 5. Computation of rising and setting. 6. Jupiter's rising and setting. 7. Venus: Rising and setting. 8. Rising and setting of a star. 9. Canopus: Rising.

##### 19. Conjunction of Planets ... 264

1. Types of planetary conjunctions. 2. Conjunction: Principle of computation. 3. Computation of conjunction.

##### 20. Conjunction of Stars and Planets ... 271

1. Conjunction of stars and planets. 2. Principle of planet-star conjunction. 3. Occultation of stars by planets. 4. Occultation of Rohiṇī by planets. 5. Occultation of stars by the Moon. 6. Time of star-planet conjunction.

#### V. INNOVATIVE TRENDS

##### 21. Novel Innovations ... 274

1. True longitude computation on the sphere of the zodiac. 2. Computation of True Moon. 3. Simplified astronomical procedures.

#### IV. OCCULTATION

##### 16. Eclipses ... 196

1. Cause stated in the Ṛgveda. 2. Cause of the lunar eclipse. 3. Lunar eclipse: Principle of computation. 4. Lunar eclipse computation: Vāsiṣṭha and Pauliṣa. 5. —Saurasiddhānta. 6. —Āryabhaṭīya. 7. —Āryabhaṭa's Midnight system. 8. —Emendation by Brahmagupta. 9. —Bhāskara I. 10. —Lalla. 11. —Bhāskara II. 12. —Karaṇaratna. 13. —Śrīpati. 14. —Vākyakaraṇa. 15. —Grahalāghava. 16. Lunar eclipse diagram: Vāsiṣṭha Pauliṣa. 17. —Āryabhaṭa's Midnight system. 18. —Bhāskara I. 19. —Lalla. 20. —Sūryasiddhānta. 21. —Bhāskara II. 22. —Karaṇaratna. 23. Solar eclipse: Computation: Pauliṣa. 24. —Romakasiddhānta. 25. —Saurasiddhānta. 26. —Āryabhaṭa's Midnight system. 27. —Bhāskara I. 28. —Lalla. 29. —Mahāsiddhānta. 30. —Bhāskara II. 31. —Karaṇaratna. 32. —Śrīpati. 33. —Grahalāghava. 34. —Solar eclipse diagram: Romakasiddhānta. 35. —Saurasiddhānta. 36. Colour of eclipses. 37. Conditions for non-prediction of eclipses. 38. —Inscriptional references: Lunar eclipses. 38. Solar eclipses.

##### 17. Phases of the Moon ... 241

1. Periodical appearance of the Moon. 2. Moon's luminosity. 3. Conditions of Moon's visibility. 4. Preliminaries for computation. 5. Visibility corrections: Ākṣa, Āyana and the Third. 6. Rising and setting of the Moon. 7. Moon's shadow. 8. Computation of Moon's cusps. 9. Moon's cusps—diagram.

##### 18. Heliacal rising and setting of Planets and Stars ... 254

1. Heliacal rising and setting of planets. 2. Days of rising and setting. 3. Planetary elongation for rising and setting. 4. Visibility corrections. 5. Computation of rising and setting. 6. Jupiter's rising and setting. 7. Venus: Rising and setting. 8. Rising and setting of a star. 9. Canopus: Rising.

##### 19. Conjunction of Planets ... 264

1. Types of planetary conjunctions. 2. Conjunction: Principle of computation. 3. Computation of conjunction.

##### 20. Conjunction of Stars and Planets ... 271

1. Conjunction of stars and planets. 2. Principle of planet-star conjunction. 3. Occultation of stars by planets. 4. Occultation of Rohiṇī by planets. 5. Occultation of stars by the Moon. 6. Time of star-planet conjunction.

#### V. INNOVATIVE TRENDS

##### 21. Novel Innovations ... 274

1. True longitude computation on the sphere of the zodiac. 2. Computation of True Moon. 3. Simplified astronomical procedures.

#### IV. OCCULTATION

##### 16. Eclipses ... 196

1. Cause stated in the Ṛgveda. 2. Cause of the lunar eclipse. 3. Lunar eclipse: Principle of computation. 4. Lunar eclipse computation: Vāsiṣṭha and Pauliṣa. 5. —Saurasiddhānta. 6. —Āryabhaṭīya. 7. —Āryabhaṭa's Midnight system. 8. —Emendation by Brahmagupta. 9. —Bhāskara I. 10. —Lalla. 11. —Bhāskara II. 12. —Karaṇaratna. 13. —Śrīpati. 14. —Vākyakaraṇa. 15. —Grahalāghava. 16. Lunar eclipse diagram: Vāsiṣṭha Pauliṣa. 17. —Āryabhaṭa's Midnight system. 18. —Bhāskara I. 19. —Lalla. 20. —Sūryasiddhānta. 21. —Bhāskara II. 22. —Karaṇaratna. 23. Solar eclipse: Computation: Pauliṣa. 24. —Romakasiddhānta. 25. —Saurasiddhānta. 26. —Āryabhaṭa's Midnight system. 27. —Bhāskara I. 28. —Lalla. 29. —Mahāsiddhānta. 30. —Bhāskara II. 31. —Karaṇaratna. 32. —Śrīpati. 33. —Grahalāghava. 34. —Solar eclipse diagram: Romakasiddhānta. 35. —Saurasiddhānta. 36. Colour of eclipses. 37. Conditions for non-prediction of eclipses. 38. —Inscriptional references: Lunar eclipses. 38. Solar eclipses.

##### 17. Phases of the Moon ... 241

1. Periodical appearance of the Moon. 2. Moon's luminosity. 3. Conditions of Moon's visibility. 4. Preliminaries for computation. 5. Visibility corrections: Ākṣa, Āyana and the Third. 6. Rising and setting of the Moon. 7. Moon's shadow. 8. Computation of Moon's cusps. 9. Moon's cusps—diagram.

##### 18. Heliacal rising and setting of Planets and Stars ... 254

1. Heliacal rising and setting of planets. 2. Days of rising and setting. 3. Planetary elongation for rising and setting. 4. Visibility corrections. 5. Computation of rising and setting. 6. Jupiter's rising and setting. 7. Venus: Rising and setting. 8. Rising and setting of a star. 9. Canopus: Rising.

##### 19. Conjunction of Planets ... 264

1. Types of planetary conjunctions. 2. Conjunction: Principle of computation. 3. Computation of conjunction.

##### 20. Conjunction of Stars and Planets ... 271

1. Conjunction of stars and planets. 2. Principle of planet-star conjunction. 3. Occultation of stars by planets. 4. Occultation of Rohiṇī by planets. 5. Occultation of stars by the Moon. 6. Time of star-planet conjunction.

#### V. INNOVATIVE TRENDS

##### 21. Novel Innovations ... 274

1. True longitude computation on the sphere of the zodiac. 2. Computation of True Moon. 3. Simplified astronomical procedures.



#### IV. OCCULTATION

##### 16. Eclipses ... 196

1. Cause stated in the Ṛgveda. 2. Cause of the lunar eclipse. 3. Lunar eclipse: Principle of computation. 4. Lunar eclipse computation: Vāsiṣṭha and Pauliṣa. 5. —Saurasiddhānta. 6. —Āryabhaṭīya. 7. —Āryabhaṭa's Midnight system. 8. —Emendation by Brahmagupta. 9. —Bhāskara I. 10. —Lalla. 11. —Bhāskara II. 12. —Karaṇaratna. 13. —Śrīpati. 14. —Vākyakaraṇa. 15. —Grahalāghava. 16. Lunar eclipse diagram: Vāsiṣṭha Pauliṣa. 17. —Āryabhaṭa's Midnight system. 18. —Bhāskara I. 19. —Lalla. 20. —Sūryasiddhānta. 21. —Bhāskara II. 22. —Karaṇaratna. 23. Solar eclipse: Computation: Pauliṣa. 24. —Romakasiddhānta. 25. —Saurasiddhānta. 26. —Āryabhaṭa's Midnight system. 27. —Bhāskara I. 28. —Lalla. 29. —Mahāśiddhānta. 30. —Bhāskara II. 31. —Karaṇaratna. 32. —Śrīpati. 33. —Grahalāghava. 34. —Solar eclipse diagram: Romakasiddhānta. 35. —Saurasiddhānta. 36. Colour of eclipses. 37. Conditions for non-prediction of eclipses. 38. —Inscriptional references: Lunar eclipses. 38. Solar eclipses.

##### 17. Phases of the Moon ... 241

1. Periodical appearance of the Moon. 2. Moon's luminosity. 3. Conditions of Moon's visibility. 4. Preliminaries for computation. 5. Visibility corrections: Ākṣa, Āyana and the Third. 6. Rising and setting of the Moon. 7. Moon's shadow. 8. Computation of Moon's cusps. 9. Moon's cusps—diagram.

##### 18. Heliacal rising and setting of Planets and Stars ... 254

1. Heliacal rising and setting of planets. 2. Days of rising and setting. 3. Planetary elongation for rising and setting. 4. Visibility corrections. 5. Computation of rising and setting. 6. Jupiter's rising and setting. 7. Venus: Rising and setting. 8. Rising and setting of a star. 9. Canopus: Rising.

##### 19. Conjunction of Planets ... 264

1. Types of planetary conjunctions. 2. Conjunction: Principle of computation. 3. Computation of conjunction.

##### 20. Conjunction of Stars and Planets ... 271

1. Conjunction of stars and planets. 2. Principle of planet-star conjunction. 3. Occultation of stars by planets. 4. Occultation of Rohiṇī by planets. 5. Occultation of stars by the Moon. 6. Time of star-planet conjunction.

#### V. INNOVATIVE TRENDS

##### 21. Novel Innovations ... 274

1. True longitude computation on the sphere of the zodiac. 2. Computation of True Moon. 3. Simplified astronomical procedures.

#### IV. OCCULTATION

##### 16. Eclipses ... 196

1. Cause stated in the Ṛgveda. 2. Cause of the lunar eclipse. 3. Lunar eclipse: Principle of computation. 4. Lunar eclipse computation: Vāsiṣṭha and Pauliṣa. 5. —Saurasiddhānta. 6. —Āryabhaṭīya. 7. —Āryabhaṭa's Midnight system. 8. —Emendation by Brahmagupta. 9. —Bhāskara I. 10. —Lalla. 11. —Bhāskara II. 12. —Karaṇaratna. 13. —Śrīpati. 14. —Vākyakaraṇa. 15. —Grahalāghava. 16. Lunar eclipse diagram: Vāsiṣṭha Pauliṣa. 17. —Āryabhaṭa's Midnight system. 18. —Bhāskara I. 19. —Lalla. 20. —Sūryasiddhānta. 21. —Bhāskara II. 22. —Karaṇaratna. 23. Solar eclipse: Computation: Pauliṣa. 24. —Romakasiddhānta. 25. —Saurasiddhānta. 26. —Āryabhaṭa's Midnight system. 27. —Bhāskara I. 28. —Lalla. 29. —Mahāsiddhānta. 30. —Bhāskara II. 31. —Karaṇaratna. 32. —Śrīpati. 33. —Grahalāghava. 34. —Solar eclipse diagram: Romakasiddhānta. 35. —Saurasiddhānta. 36. Colour of eclipses. 37. Conditions for non-prediction of eclipses. 38. —Inscriptional references: Lunar eclipses. 38. Solar eclipses.

##### 17. Phases of the Moon ... 241

1. Periodical appearance of the Moon. 2. Moon's luminosity. 3. Conditions of Moon's visibility. 4. Preliminaries for computation. 5. Visibility corrections: Ākṣa, Āyana and the Third. 6. Rising and setting of the Moon. 7. Moon's shadow. 8. Computation of Moon's cusps. 9. Moon's cusps—diagram.

##### 18. Heliacal rising and setting of Planets and Stars ... 254

1. Heliacal rising and setting of planets. 2. Days of rising and setting. 3. Planetary elongation for rising and setting. 4. Visibility corrections. 5. Computation of rising and setting. 6. Jupiter's rising and setting. 7. Venus: Rising and setting. 8. Rising and setting of a star. 9. Canopus: Rising.

##### 19. Conjunction of Planets ... 264

1. Types of planetary conjunctions. 2. Conjunction: Principle of computation. 3. Computation of conjunction.

##### 20. Conjunction of Stars and Planets ... 271

1. Conjunction of stars and planets. 2. Principle of planet-star conjunction. 3. Occultation of stars by planets. 4. Occultation of Rohiṇī by planets. 5. Occultation of stars by the Moon. 6. Time of star-planet conjunction.

#### V. INNOVATIVE TRENDS

##### 21. Novel Innovations ... 274

1. True longitude computation on the sphere of the zodiac. 2. Computation of True Moon. 3. Simplified astronomical procedures.

#### IV. OCCULTATION

##### 16. Eclipses ... 196

1. Cause stated in the Ṛgveda. 2. Cause of the lunar eclipse. 3. Lunar eclipse: Principle of computation. 4. Lunar eclipse computation: Vāsiṣṭha and Pauliṣa. 5. —Saurasiddhānta. 6. —Āryabhaṭīya. 7. —Āryabhaṭa's Midnight system. 8. —Emendation by Brahmagupta. 9. —Bhāskara I. 10. —Lalla. 11. —Bhāskara II. 12. —Karaṇaratna. 13. —Śrīpati. 14. —Vākyakaraṇa. 15. —Grahalāghava. 16. Lunar eclipse diagram: Vāsiṣṭha Pauliṣa. 17. —Āryabhaṭa's Midnight system. 18. —Bhāskara I. 19. —Lalla. 20. —Sūryasiddhānta. 21. —Bhāskara II. 22. —Karaṇaratna. 23. Solar eclipse: Computation: Pauliṣa. 24. —Romakasiddhānta. 25. —Saurasiddhānta. 26. —Āryabhaṭa's Midnight system. 27. —Bhāskara I. 28. —Lalla. 29. —Mahāsiddhānta. 30. —Bhāskara II. 31. —Karaṇaratna. 32. —Śrīpati. 33. —Grahalāghava. 34. —Solar eclipse diagram: Romakasiddhānta. 35. —Saurasiddhānta. 36. Colour of eclipses. 37. Conditions for non-prediction of eclipses. 38. —Inscriptional references: Lunar eclipses. 38. Solar eclipses.

##### 17. Phases of the Moon ... 241

1. Periodical appearance of the Moon. 2. Moon's luminosity. 3. Conditions of Moon's visibility. 4. Preliminaries for computation. 5. Visibility corrections: Ākṣa, Āyana and the Third. 6. Rising and setting of the Moon. 7. Moon's shadow. 8. Computation of Moon's cusps. 9. Moon's cusps—diagram.

##### 18. Heliacal rising and setting of Planets and Stars ... 254

1. Heliacal rising and setting of planets. 2. Days of rising and setting. 3. Planetary elongation for rising and setting. 4. Visibility corrections. 5. Computation of rising and setting. 6. Jupiter's rising and setting. 7. Venus: Rising and setting. 8. Rising and setting of a star. 9. Canopus: Rising.

##### 19. Conjunction of Planets ... 264

1. Types of planetary conjunctions. 2. Conjunction: Principle of computation. 3. Computation of conjunction.

##### 20. Conjunction of Stars and Planets ... 271

1. Conjunction of stars and planets. 2. Principle of planet-star conjunction. 3. Occultation of stars by planets. 4. Occultation of Rohiṇī by planets. 5. Occultation of stars by the Moon. 6. Time of star-planet conjunction.

#### V. INNOVATIVE TRENDS

##### 21. Novel Innovations ... 274

1. True longitude computation on the sphere of the zodiac. 2. Computation of True Moon. 3. Simplified astronomical procedures.

#### IV. OCCULTATION

##### 16. Eclipses ... 196

1. Cause stated in the Ṛgveda. 2. Cause of the lunar eclipse. 3. Lunar eclipse: Principle of computation. 4. Lunar eclipse computation: Vāsiṣṭha and Pauliṣa. 5. —Saurasiddhānta. 6. —Āryabhaṭīya. 7. —Āryabhaṭa's Midnight system. 8. —Emendation by Brahmagupta. 9. —Bhāskara I. 10. —Lalla. 11. —Bhāskara II. 12. —Karaṇaratna. 13. —Śrīpati. 14. —Vākyakaraṇa. 15. —Grahalāghava. 16. Lunar eclipse diagram: Vāsiṣṭha Pauliṣa. 17. —Āryabhaṭa's Midnight system. 18. —Bhāskara I. 19. —Lalla. 20. —Sūryasiddhānta. 21. —Bhāskara II. 22. —Karaṇaratna. 23. Solar eclipse: Computation: Pauliṣa. 24. —Romakasiddhānta. 25. —Saurasiddhānta. 26. —Āryabhaṭa's Midnight system. 27. —Bhāskara I. 28. —Lalla. 29. —Mahāsiddhānta. 30. —Bhāskara II. 31. —Karaṇaratna. 32. —Śrīpati. 33. —Grahalāghava. 34. —Solar eclipse diagram: Romakasiddhānta. 35. —Saurasiddhānta. 36. Colour of eclipses. 37. Conditions for non-prediction of eclipses. 38. —Inscriptional references: Lunar eclipses. 38. Solar eclipses.

##### 17. Phases of the Moon ... 241

1. Periodical appearance of the Moon. 2. Moon's luminosity. 3. Conditions of Moon's visibility. 4. Preliminaries for computation. 5. Visibility corrections: Ākṣa, Āyana and the Third. 6. Rising and setting of the Moon. 7. Moon's shadow. 8. Computation of Moon's cusps. 9. Moon's cusps—diagram.

##### 18. Heliacal rising and setting of Planets and Stars ... 254

1. Heliacal rising and setting of planets. 2. Days of rising and setting. 3. Planetary elongation for rising and setting. 4. Visibility corrections. 5. Computation of rising and setting. 6. Jupiter's rising and setting. 7. Venus: Rising and setting. 8. Rising and setting of a star. 9. Canopus: Rising.

##### 19. Conjunction of Planets ... 264

1. Types of planetary conjunctions. 2. Conjunction: Principle of computation. 3. Computation of conjunction.

##### 20. Conjunction of Stars and Planets ... 271

1. Conjunction of stars and planets. 2. Principle of planet-star conjunction. 3. Occultation of stars by planets. 4. Occultation of Rohiṇī by planets. 5. Occultation of stars by the Moon. 6. Time of star-planet conjunction.

#### V. INNOVATIVE TRENDS

##### 21. Novel Innovations ... 274

1. True longitude computation on the sphere of the zodiac. 2. Computation of True Moon. 3. Simplified astronomical procedures.

#### IV. OCCULTATION

##### 16. Eclipses ... 196

1. Cause stated in the Ṛgveda. 2. Cause of the lunar eclipse. 3. Lunar eclipse: Principle of computation. 4. Lunar eclipse computation: Vāsiṣṭha and Pauliṣa. 5. —Saurasiddhānta. 6. —Āryabhaṭīya. 7. —Āryabhaṭa's Midnight system. 8. —Emendation by Brahmagupta. 9. —Bhāskara I. 10. —Lalla. 11. —Bhāskara II. 12. —Karaṇaratna. 13. —Śrīpati. 14. —Vākyakaraṇa. 15. —Grahalāghava. 16. Lunar eclipse diagram: Vāsiṣṭha Pauliṣa. 17. —Āryabhaṭa's Midnight system. 18. —Bhāskara I. 19. —Lalla. 20. —Sūryasiddhānta. 21. —Bhāskara II. 22. —Karaṇaratna. 23. Solar eclipse: Computation: Pauliṣa. 24. —Romakasiddhānta. 25. —Saurasiddhānta. 26. —Āryabhaṭa's Midnight system. 27. —Bhāskara I. 28. —Lalla. 29. —Mahāsiddhānta. 30. —Bhāskara II. 31. —Karaṇaratna. 32. —Śrīpati. 33. —Grahalāghava. 34. —Solar eclipse diagram: Romakasiddhānta. 35. —Saurasiddhānta. 36. Colour of eclipses. 37. Conditions for non-prediction of eclipses. 38. —Inscriptional references: Lunar eclipses. 38. Solar eclipses.

##### 17. Phases of the Moon ... 241

1. Periodical appearance of the Moon. 2. Moon's luminosity. 3. Conditions of Moon's visibility. 4. Preliminaries for computation. 5. Visibility corrections: Ākṣa, Āyana and the Third. 6. Rising and setting of the Moon. 7. Moon's shadow. 8. Computation of Moon's cusps. 9. Moon's cusps—diagram.

##### 18. Heliacal rising and setting of Planets and Stars ... 254

1. Heliacal rising and setting of planets. 2. Days of rising and setting. 3. Planetary elongation for rising and setting. 4. Visibility corrections. 5. Computation of rising and setting. 6. Jupiter's rising and setting. 7. Venus: Rising and setting. 8. Rising and setting of a star. 9. Canopus: Rising.

##### 19. Conjunction of Planets ... 264

1. Types of planetary conjunctions. 2. Conjunction: Principle of computation. 3. Computation of conjunction.

##### 20. Conjunction of Stars and Planets ... 271

1. Conjunction of stars and planets. 2. Principle of planet-star conjunction. 3. Occultation of stars by planets. 4. Occultation of Rohiṇī by planets. 5. Occultation of stars by the Moon. 6. Time of star-planet conjunction.

#### V. INNOVATIVE TRENDS

##### 21. Novel Innovations ... 274

1. True longitude computation on the sphere of the zodiac. 2. Computation of True Moon. 3. Simplified astronomical procedures.

#### IV. OCCULTATION

##### 16. Eclipses ... 196

1. Cause stated in the Ṛgveda. 2. Cause of the lunar eclipse. 3. Lunar eclipse: Principle of computation. 4. Lunar eclipse computation: Vāsiṣṭha and Pauliṣa. 5. —Saurasiddhānta. 6. —Āryabhaṭīya. 7. —Āryabhaṭa's Midnight system. 8. —Emendation by Brahmagupta. 9. —Bhāskara I. 10. —Lalla. 11. —Bhāskara II. 12. —Karaṇaratna. 13. —Śrīpati. 14. —Vākyakaraṇa. 15. —Grahalāghava. 16. Lunar eclipse diagram: Vāsiṣṭha Pauliṣa. 17. —Āryabhaṭa's Midnight system. 18. —Bhāskara I. 19. —Lalla. 20. —Sūryasiddhānta. 21. —Bhāskara II. 22. —Karaṇaratna. 23. Solar eclipse: Computation: Pauliṣa. 24. —Romakasiddhānta. 25. —Saurasiddhānta. 26. —Āryabhaṭa's Midnight system. 27. —Bhāskara I. 28. —Lalla. 29. —Mahāsiddhānta. 30. —Bhāskara II. 31. —Karaṇaratna. 32. —Śrīpati. 33. —Grahalāghava. 34. —Solar eclipse diagram: Romakasiddhānta. 35. —Saurasiddhānta. 36. Colour of eclipses. 37. Conditions for non-prediction of eclipses. 38. —Inscriptional references: Lunar eclipses. 38. Solar eclipses.

##### 17. Phases of the Moon ... 241

1. Periodical appearance of the Moon. 2. Moon's luminosity. 3. Conditions of Moon's visibility. 4. Preliminaries for computation. 5. Visibility corrections: Ākṣa, Āyana and the Third. 6. Rising and setting of the Moon. 7. Moon's shadow. 8. Computation of Moon's cusps. 9. Moon's cusps—diagram.

##### 18. Heliacal rising and setting of Planets and Stars ... 254

1. Heliacal rising and setting of planets. 2. Days of rising and setting. 3. Planetary elongation for rising and setting. 4. Visibility corrections. 5. Computation of rising and setting. 6. Jupiter's rising and setting. 7. Venus: Rising and setting. 8. Rising and setting of a star. 9. Canopus: Rising.

##### 19. Conjunction of Planets ... 264

1. Types of planetary conjunctions. 2. Conjunction: Principle of computation. 3. Computation of conjunction.

##### 20. Conjunction of Stars and Planets ... 271

1. Conjunction of stars and planets. 2. Principle of planet-star conjunction. 3. Occultation of stars by planets. 4. Occultation of Rohiṇī by planets. 5. Occultation of stars by the Moon. 6. Time of star-planet conjunction.

#### V. INNOVATIVE TRENDS

##### 21. Novel Innovations ... 274

1. True longitude computation on the sphere of the zodiac. 2. Computation of True Moon. 3. Simplified astronomical procedures.

#### IV. OCCULTATION

##### 16. Eclipses ... 196

1. Cause stated in the Ṛgveda. 2. Cause of the lunar eclipse. 3. Lunar eclipse: Principle of computation. 4. Lunar eclipse computation: Vāsiṣṭha and Pauliṣa. 5. —Saurasiddhānta. 6. —Āryabhaṭīya. 7. —Āryabhaṭa's Midnight system. 8. —Emendation by Brahmagupta. 9. —Bhāskara I. 10. —Lalla. 11. —Bhāskara II. 12. —Karaṇaratna. 13. —Śrīpati. 14. —Vākyakaraṇa. 15. —Grahalāghava. 16. Lunar eclipse diagram: Vāsiṣṭha Pauliṣa. 17. —Āryabhaṭa's Midnight system. 18. —Bhāskara I. 19. —Lalla. 20. —Sūryasiddhānta. 21. —Bhāskara II. 22. —Karaṇaratna. 23. Solar eclipse: Computation: Pauliṣa. 24. —Romakasiddhānta. 25. —Saurasiddhānta. 26. —Āryabhaṭa's Midnight system. 27. —Bhāskara I. 28. —Lalla. 29. —Mahāsiddhānta. 30. —Bhāskara II. 31. —Karaṇaratna. 32. —Śrīpati. 33. —Grahalāghava. 34. —Solar eclipse diagram: Romakasiddhānta. 35. —Saurasiddhānta. 36. Colour of eclipses. 37. Conditions for non-prediction of eclipses. 38. —Inscriptional references: Lunar eclipses. 38. Solar eclipses.

##### 17. Phases of the Moon ... 241

1. Periodical appearance of the Moon. 2. Moon's luminosity. 3. Conditions of Moon's visibility. 4. Preliminaries for computation. 5. Visibility corrections: Ākṣa, Āyana and the Third. 6. Rising and setting of the Moon. 7. Moon's shadow. 8. Computation of Moon's cusps. 9. Moon's cusps—diagram.

##### 18. Heliacal rising and setting of Planets and Stars ... 254

1. Heliacal rising and setting of planets. 2. Days of rising and setting. 3. Planetary elongation for rising and setting. 4. Visibility corrections. 5. Computation of rising and setting. 6. Jupiter's rising and setting. 7. Venus: Rising and setting. 8. Rising and setting of a star. 9. Canopus: Rising.

##### 19. Conjunction of Planets ... 264

1. Types of planetary conjunctions. 2. Conjunction: Principle of computation. 3. Computation of conjunction.

##### 20. Conjunction of Stars and Planets ... 271

1. Conjunction of stars and planets. 2. Principle of planet-star conjunction. 3. Occultation of stars by planets. 4. Occultation of Rohiṇī by planets. 5. Occultation of stars by the Moon. 6. Time of star-planet conjunction.

#### V. INNOVATIVE TRENDS

##### 21. Novel Innovations ... 274

1. True longitude computation on the sphere of the zodiac. 2. Computation of True Moon. 3. Simplified astronomical procedures.

#### IV. OCCULTATION

##### 16. Eclipses ... 196

1. Cause stated in the Ṛgveda. 2. Cause of the lunar eclipse. 3. Lunar eclipse: Principle of computation. 4. Lunar eclipse computation: Vāsiṣṭha and Pauliṣa. 5. —Saurasiddhānta. 6. —Āryabhaṭīya. 7. —Āryabhaṭa's Midnight system. 8. —Emendation by Brahmagupta. 9. —Bhāskara I. 10. —Lalla. 11. —Bhāskara II. 12. —Karaṇaratna. 13. —Śrīpati. 14. —Vākyakaraṇa. 15. —Grahalāghava. 16. Lunar eclipse diagram: Vāsiṣṭha Pauliṣa. 17. —Āryabhaṭa's Midnight system. 18. —Bhāskara I. 19. —Lalla. 20. —Sūryasiddhānta. 21. —Bhāskara II. 22. —Karaṇaratna. 23. Solar eclipse: Computation: Pauliṣa. 24. —Romakasiddhānta. 25. —Saurasiddhānta. 26. —Āryabhaṭa's Midnight system. 27. —Bhāskara I. 28. —Lalla. 29. —Mahāsiddhānta. 30. —Bhāskara II. 31. —Karaṇaratna. 32. —Śrīpati. 33. —Grahalāghava. 34. —Solar eclipse diagram: Romakasiddhānta. 35. —Saurasiddhānta. 36. Colour of eclipses. 37. Conditions for non-prediction of eclipses. 38. —Inscriptional references: Lunar eclipses. 38. Solar eclipses.

##### 17. Phases of the Moon ... 241

1. Periodical appearance of the Moon. 2. Moon's luminosity. 3. Conditions of Moon's visibility. 4. Preliminaries for computation. 5. Visibility corrections: Ākṣa, Āyana and the Third. 6. Rising and setting of the Moon. 7. Moon's shadow. 8. Computation of Moon's cusps. 9. Moon's cusps—diagram.

##### 18. Heliacal rising and setting of Planets and Stars ... 254

1. Heliacal rising and setting of planets. 2. Days of rising and setting. 3. Planetary elongation for rising and setting. 4. Visibility corrections. 5. Computation of rising and setting. 6. Jupiter's rising and setting. 7. Venus: Rising and setting. 8. Rising and setting of a star. 9. Canopus: Rising.

##### 19. Conjunction of Planets ... 264

1. Types of planetary conjunctions. 2. Conjunction: Principle of computation. 3. Computation of conjunction.

##### 20. Conjunction of Stars and Planets ... 271

1. Conjunction of stars and planets. 2. Principle of planet-star conjunction. 3. Occultation of stars by planets. 4. Occultation of Rohiṇī by planets. 5. Occultation of stars by the Moon. 6. Time of star-planet conjunction.

#### V. INNOVATIVE TRENDS

##### 21. Novel Innovations ... 274

1. True longitude computation on the sphere of the zodiac. 2. Computation of True Moon. 3. Simplified astronomical procedures.



#### IV. OCCULTATION

##### 16. Eclipses ... 196

1. Cause stated in the Ṛgveda. 2. Cause of the lunar eclipse. 3. Lunar eclipse: Principle of computation. 4. Lunar eclipse computation: Vāsiṣṭha and Pauliṣa. 5. —Saurasiddhānta. 6. —Āryabhaṭīya. 7. —Āryabhaṭa's Midnight system. 8. —Emendation by Brahmagupta. 9. —Bhāskara I. 10. —Lalla. 11. —Bhāskara II. 12. —Karaṇaratna. 13. —Śrīpati. 14. —Vākyakaraṇa. 15. —Grahalāghava. 16. Lunar eclipse diagram: Vāsiṣṭha Pauliṣa. 17. —Āryabhaṭa's Midnight system. 18. —Bhāskara I. 19. —Lalla. 20. —Sūryasiddhānta. 21. —Bhāskara II. 22. —Karaṇaratna. 23. Solar eclipse: Computation: Pauliṣa. 24. —Romakasiddhānta. 25. —Saurasiddhānta. 26. —Āryabhaṭa's Midnight system. 27. —Bhāskara I. 28. —Lalla. 29. —Mahāsiddhānta. 30. —Bhāskara II. 31. —Karaṇaratna. 32. —Śrīpati. 33. —Grahalāghava. 34. —Solar eclipse diagram: Romakasiddhānta. 35. —Saurasiddhānta. 36. Colour of eclipses. 37. Conditions for non-prediction of eclipses. 38. —Inscriptional references: Lunar eclipses. 38. Solar eclipses.

##### 17. Phases of the Moon ... 241

1. Periodical appearance of the Moon. 2. Moon's luminosity. 3. Conditions of Moon's visibility. 4. Preliminaries for computation. 5. Visibility corrections: Ākṣa, Āyana and the Third. 6. Rising and setting of the Moon. 7. Moon's shadow. 8. Computation of Moon's cusps. 9. Moon's cusps—diagram.

##### 18. Heliacal rising and setting of Planets and Stars ... 254

1. Heliacal rising and setting of planets. 2. Days of rising and setting. 3. Planetary elongation for rising and setting. 4. Visibility corrections. 5. Computation of rising and setting. 6. Jupiter's rising and setting. 7. Venus: Rising and setting. 8. Rising and setting of a star. 9. Canopus: Rising.

##### 19. Conjunction of Planets ... 264

1. Types of planetary conjunctions. 2. Conjunction: Principle of computation. 3. Computation of conjunction.

##### 20. Conjunction of Stars and Planets ... 271

1. Conjunction of stars and planets. 2. Principle of planet-star conjunction. 3. Occultation of stars by planets. 4. Occultation of Rohiṇī by planets. 5. Occultation of stars by the Moon. 6. Time of star-planet conjunction.

#### V. INNOVATIVE TRENDS

##### 21. Novel Innovations ... 274

1. True longitude computation on the sphere of the zodiac. 2. Computation of True Moon. 3. Simplified astronomical procedures.

#### IV. OCCULTATION

##### 16. Eclipses ... 196

1. Cause stated in the Ṛgveda. 2. Cause of the lunar eclipse. 3. Lunar eclipse: Principle of computation. 4. Lunar eclipse computation: Vāsiṣṭha and Pauliṣa. 5. —Saurasiddhānta. 6. —Āryabhaṭīya. 7. —Āryabhaṭa's Midnight system. 8. —Emendation by Brahmagupta. 9. —Bhāskara I. 10. —Lalla. 11. —Bhāskara II. 12. —Karaṇaratna. 13. —Śrīpati. 14. —Vākyakaraṇa. 15. —Grahalāghava. 16. Lunar eclipse diagram: Vāsiṣṭha Pauliṣa. 17. —Āryabhaṭa's Midnight system. 18. —Bhāskara I. 19. —Lalla. 20. —Sūryasiddhānta. 21. —Bhāskara II. 22. —Karaṇaratna. 23. Solar eclipse: Computation: Pauliṣa. 24. —Romakasiddhānta. 25. —Saurasiddhānta. 26. —Āryabhaṭa's Midnight system. 27. —Bhāskara I. 28. —Lalla. 29. —Mahāsiddhānta. 30. —Bhāskara II. 31. —Karaṇaratna. 32. —Śrīpati. 33. —Grahalāghava. 34. —Solar eclipse diagram: Romakasiddhānta. 35. —Saurasiddhānta. 36. Colour of eclipses. 37. Conditions for non-prediction of eclipses. 38. —Inscriptional references: Lunar eclipses. 38. Solar eclipses.

##### 17. Phases of the Moon ... 241

1. Periodical appearance of the Moon. 2. Moon's luminosity. 3. Conditions of Moon's visibility. 4. Preliminaries for computation. 5. Visibility corrections: Ākṣa, Āyana and the Third. 6. Rising and setting of the Moon. 7. Moon's shadow. 8. Computation of Moon's cusps. 9. Moon's cusps—diagram.

##### 18. Heliacal rising and setting of Planets and Stars ... 254

1. Heliacal rising and setting of planets. 2. Days of rising and setting. 3. Planetary elongation for rising and setting. 4. Visibility corrections. 5. Computation of rising and setting. 6. Jupiter's rising and setting. 7. Venus: Rising and setting. 8. Rising and setting of a star. 9. Canopus: Rising.

##### 19. Conjunction of Planets ... 264

1. Types of planetary conjunctions. 2. Conjunction: Principle of computation. 3. Computation of conjunction.

##### 20. Conjunction of Stars and Planets ... 271

1. Conjunction of stars and planets. 2. Principle of planet-star conjunction. 3. Occultation of stars by planets. 4. Occultation of Rohiṇī by planets. 5. Occultation of stars by the Moon. 6. Time of star-planet conjunction.

#### V. INNOVATIVE TRENDS

##### 21. Novel Innovations ... 274

1. True longitude computation on the sphere of the zodiac. 2. Computation of True Moon. 3. Simplified astronomical procedures.

#### IV. OCCULTATION

##### 16. Eclipses ... 196

1. Cause stated in the Ṛgveda. 2. Cause of the lunar eclipse. 3. Lunar eclipse: Principle of computation. 4. Lunar eclipse computation: Vāsiṣṭha and Pauliṣa. 5. —Saurasiddhānta. 6. —Āryabhaṭīya. 7. —Āryabhaṭa's Midnight system. 8. —Emendation by Brahmagupta. 9. —Bhāskara I. 10. —Lalla. 11. —Bhāskara II. 12. —Karaṇaratna. 13. —Śrīpati. 14. —Vākyakaraṇa. 15. —Grahalāghava. 16. Lunar eclipse diagram: Vāsiṣṭha Pauliṣa. 17. —Āryabhaṭa's Midnight system. 18. —Bhāskara I. 19. —Lalla. 20. —Sūryasiddhānta. 21. —Bhāskara II. 22. —Karaṇaratna. 23. Solar eclipse: Computation: Pauliṣa. 24. —Romakasiddhānta. 25. —Saurasiddhānta. 26. —Āryabhaṭa's Midnight system. 27. —Bhāskara I. 28. —Lalla. 29. —Mahāsiddhānta. 30. —Bhāskara II. 31. —Karaṇaratna. 32. —Śrīpati. 33. —Grahalāghava. 34. —Solar eclipse diagram: Romakasiddhānta. 35. —Saurasiddhānta. 36. Colour of eclipses. 37. Conditions for non-prediction of eclipses. 38. —Inscriptional references: Lunar eclipses. 38. Solar eclipses.

##### 17. Phases of the Moon ... 241

1. Periodical appearance of the Moon. 2. Moon's luminosity. 3. Conditions of Moon's visibility. 4. Preliminaries for computation. 5. Visibility corrections: Ākṣa, Āyana and the Third. 6. Rising and setting of the Moon. 7. Moon's shadow. 8. Computation of Moon's cusps. 9. Moon's cusps—diagram.

##### 18. Heliacal rising and setting of Planets and Stars ... 254

1. Heliacal rising and setting of planets. 2. Days of rising and setting. 3. Planetary elongation for rising and setting. 4. Visibility corrections. 5. Computation of rising and setting. 6. Jupiter's rising and setting. 7. Venus: Rising and setting. 8. Rising and setting of a star. 9. Canopus: Rising.

##### 19. Conjunction of Planets ... 264

1. Types of planetary conjunctions. 2. Conjunction: Principle of computation. 3. Computation of conjunction.

##### 20. Conjunction of Stars and Planets ... 271

1. Conjunction of stars and planets. 2. Principle of planet-star conjunction. 3. Occultation of stars by planets. 4. Occultation of Rohiṇī by planets. 5. Occultation of stars by the Moon. 6. Time of star-planet conjunction.

#### V. INNOVATIVE TRENDS

##### 21. Novel Innovations ... 274

1. True longitude computation on the sphere of the zodiac. 2. Computation of True Moon. 3. Simplified astronomical procedures.

#### IV. OCCULTATION

##### 16. Eclipses ... 196

1. Cause stated in the Ṛgveda. 2. Cause of the lunar eclipse. 3. Lunar eclipse: Principle of computation. 4. Lunar eclipse computation: Vāsiṣṭha and Pauliṣa. 5. —Saurasiddhānta. 6. —Āryabhaṭīya. 7. —Āryabhaṭa's Midnight system. 8. —Emendation by Brahmagupta. 9. —Bhāskara I. 10. —Lalla. 11. —Bhāskara II. 12. —Karaṇaratna. 13. —Śrīpati. 14. —Vākyakaraṇa. 15. —Grahalāghava. 16. Lunar eclipse diagram: Vāsiṣṭha Pauliṣa. 17. —Āryabhaṭa's Midnight system. 18. —Bhāskara I. 19. —Lalla. 20. —Sūryasiddhānta. 21. —Bhāskara II. 22. —Karaṇaratna. 23. Solar eclipse: Computation: Pauliṣa. 24. —Romakasiddhānta. 25. —Saurasiddhānta. 26. —Āryabhaṭa's Midnight system. 27. —Bhāskara I. 28. —Lalla. 29. —Mahāsiddhānta. 30. —Bhāskara II. 31. —Karaṇaratna. 32. —Śrīpati. 33. —Grahalāghava. 34. —Solar eclipse diagram: Romakasiddhānta. 35. —Saurasiddhānta. 36. Colour of eclipses. 37. Conditions for non-prediction of eclipses. 38. —Inscriptional references: Lunar eclipses. 38. Solar eclipses.

##### 17. Phases of the Moon ... 241

1. Periodical appearance of the Moon. 2. Moon's luminosity. 3. Conditions of Moon's visibility. 4. Preliminaries for computation. 5. Visibility corrections: Ākṣa, Āyana and the Third. 6. Rising and setting of the Moon. 7. Moon's shadow. 8. Computation of Moon's cusps. 9. Moon's cusps—diagram.

##### 18. Heliacal rising and setting of Planets and Stars ... 254

1. Heliacal rising and setting of planets. 2. Days of rising and setting. 3. Planetary elongation for rising and setting. 4. Visibility corrections. 5. Computation of rising and setting. 6. Jupiter's rising and setting. 7. Venus: Rising and setting. 8. Rising and setting of a star. 9. Canopus: Rising.

##### 19. Conjunction of Planets ... 264

1. Types of planetary conjunctions. 2. Conjunction: Principle of computation. 3. Computation of conjunction.

##### 20. Conjunction of Stars and Planets ... 271

1. Conjunction of stars and planets. 2. Principle of planet-star conjunction. 3. Occultation of stars by planets. 4. Occultation of Rohiṇī by planets. 5. Occultation of stars by the Moon. 6. Time of star-planet conjunction.

#### V. INNOVATIVE TRENDS

##### 21. Novel Innovations ... 274

1. True longitude computation on the sphere of the zodiac. 2. Computation of True Moon. 3. Simplified astronomical procedures.

#### IV. OCCULTATION

##### 16. Eclipses ... 196

1. Cause stated in the Ṛgveda. 2. Cause of the lunar eclipse. 3. Lunar eclipse: Principle of computation. 4. Lunar eclipse computation: Vāsiṣṭha and Pauliṣa. 5. —Saurasiddhānta. 6. —Āryabhaṭīya. 7. —Āryabhaṭa's Midnight system. 8. —Emendation by Brahmagupta. 9. —Bhāskara I. 10. —Lalla. 11. —Bhāskara II. 12. —Karaṇaratna. 13. —Śrīpati. 14. —Vākyakaraṇa. 15. —Grahalāghava. 16. Lunar eclipse diagram: Vāsiṣṭha Pauliṣa. 17. —Āryabhaṭa's Midnight system. 18. —Bhāskara I. 19. —Lalla. 20. —Sūryasiddhānta. 21. —Bhāskara II. 22. —Karaṇaratna. 23. Solar eclipse: Computation: Pauliṣa. 24. —Romakasiddhānta. 25. —Saurasiddhānta. 26. —Āryabhaṭa's Midnight system. 27. —Bhāskara I. 28. —Lalla. 29. —Mahāsiddhānta. 30. —Bhāskara II. 31. —Karaṇaratna. 32. —Śrīpati. 33. —Grahalāghava. 34. —Solar eclipse diagram: Romakasiddhānta. 35. —Saurasiddhānta. 36. Colour of eclipses. 37. Conditions for non-prediction of eclipses. 38. —Inscriptional references: Lunar eclipses. 38. Solar eclipses.

##### 17. Phases of the Moon ... 241

1. Periodical appearance of the Moon. 2. Moon's luminosity. 3. Conditions of Moon's visibility. 4. Preliminaries for computation. 5. Visibility corrections: Ākṣa, Āyana and the Third. 6. Rising and setting of the Moon. 7. Moon's shadow. 8. Computation of Moon's cusps. 9. Moon's cusps—diagram.

##### 18. Heliacal rising and setting of Planets and Stars ... 254

1. Heliacal rising and setting of planets. 2. Days of rising and setting. 3. Planetary elongation for rising and setting. 4. Visibility corrections. 5. Computation of rising and setting. 6. Jupiter's rising and setting. 7. Venus: Rising and setting. 8. Rising and setting of a star. 9. Canopus: Rising.

##### 19. Conjunction of Planets ... 264

1. Types of planetary conjunctions. 2. Conjunction: Principle of computation. 3. Computation of conjunction.

##### 20. Conjunction of Stars and Planets ... 271

1. Conjunction of stars and planets. 2. Principle of planet-star conjunction. 3. Occultation of stars by planets. 4. Occultation of Rohiṇī by planets. 5. Occultation of stars by the Moon. 6. Time of star-planet conjunction.

#### V. INNOVATIVE TRENDS

##### 21. Novel Innovations ... 274

1. True longitude computation on the sphere of the zodiac. 2. Computation of True Moon. 3. Simplified astronomical procedures.

#### IV. OCCULTATION

##### 16. Eclipses ... 196

1. Cause stated in the Ṛgveda. 2. Cause of the lunar eclipse. 3. Lunar eclipse: Principle of computation. 4. Lunar eclipse computation: Vāsiṣṭha and Pauliṣa. 5. —Saurasiddhānta. 6. —Āryabhaṭīya. 7. —Āryabhaṭa's Midnight system. 8. —Emendation by Brahmagupta. 9. —Bhāskara I. 10. —Lalla. 11. —Bhāskara II. 12. —Karaṇaratna. 13. —Śrīpati. 14. —Vākyakaraṇa. 15. —Grahalāghava. 16. Lunar eclipse diagram: Vāsiṣṭha Pauliṣa. 17. —Āryabhaṭa's Midnight system. 18. —Bhāskara I. 19. —Lalla. 20. —Sūryasiddhānta. 21. —Bhāskara II. 22. —Karaṇaratna. 23. Solar eclipse: Computation: Pauliṣa. 24. —Romakasiddhānta. 25. —Saurasiddhānta. 26. —Āryabhaṭa's Midnight system. 27. —Bhāskara I. 28. —Lalla. 29. —Mahāsiddhānta. 30. —Bhāskara II. 31. —Karaṇaratna. 32. —Śrīpati. 33. —Grahalāghava. 34. —Solar eclipse diagram: Romakasiddhānta. 35. —Saurasiddhānta. 36. Colour of eclipses. 37. Conditions for non-prediction of eclipses. 38. —Inscriptional references: Lunar eclipses. 38. Solar eclipses.

##### 17. Phases of the Moon ... 241

1. Periodical appearance of the Moon. 2. Moon's luminosity. 3. Conditions of Moon's visibility. 4. Preliminaries for computation. 5. Visibility corrections: Ākṣa, Āyana and the Third. 6. Rising and setting of the Moon. 7. Moon's shadow. 8. Computation of Moon's cusps. 9. Moon's cusps—diagram.

##### 18. Heliacal rising and setting of Planets and Stars ... 254

1. Heliacal rising and setting of planets. 2. Days of rising and setting. 3. Planetary elongation for rising and setting. 4. Visibility corrections. 5. Computation of rising and setting. 6. Jupiter's rising and setting. 7. Venus: Rising and setting. 8. Rising and setting of a star. 9. Canopus: Rising.

##### 19. Conjunction of Planets ... 264

1. Types of planetary conjunctions. 2. Conjunction: Principle of computation. 3. Computation of conjunction.

##### 20. Conjunction of Stars and Planets ... 271

1. Conjunction of stars and planets. 2. Principle of planet-star conjunction. 3. Occultation of stars by planets. 4. Occultation of Rohiṇī by planets. 5. Occultation of stars by the Moon. 6. Time of star-planet conjunction.

#### V. INNOVATIVE TRENDS

##### 21. Novel Innovations ... 274

1. True longitude computation on the sphere of the zodiac. 2. Computation of True Moon. 3. Simplified astronomical procedures.

#### IV. OCCULTATION

##### 16. Eclipses ... 196

1. Cause stated in the Ṛgveda. 2. Cause of the lunar eclipse. 3. Lunar eclipse: Principle of computation. 4. Lunar eclipse computation: Vāsiṣṭha and Pauliṣa. 5. —Saurasiddhānta. 6. —Āryabhaṭīya. 7. —Āryabhaṭa's Midnight system. 8. —Emendation by Brahmagupta. 9. —Bhāskara I. 10. —Lalla. 11. —Bhāskara II. 12. —Karaṇaratna. 13. —Śrīpati. 14. —Vākyakaraṇa. 15. —Grahalāghava. 16. Lunar eclipse diagram: Vāsiṣṭha Pauliṣa. 17. —Āryabhaṭa's Midnight system. 18. —Bhāskara I. 19. —Lalla. 20. —Sūryasiddhānta. 21. —Bhāskara II. 22. —Karaṇaratna. 23. Solar eclipse: Computation: Pauliṣa. 24. —Romakasiddhānta. 25. —Saurasiddhānta. 26. —Āryabhaṭa's Midnight system. 27. —Bhāskara I. 28. —Lalla. 29. —Mahāsiddhānta. 30. —Bhāskara II. 31. —Karaṇaratna. 32. —Śrīpati. 33. —Grahalāghava. 34. —Solar eclipse diagram: Romakasiddhānta. 35. —Saurasiddhānta. 36. Colour of eclipses. 37. Conditions for non-prediction of eclipses. 38. —Inscriptional references: Lunar eclipses. 38. Solar eclipses.

##### 17. Phases of the Moon ... 241

1. Periodical appearance of the Moon. 2. Moon's luminosity. 3. Conditions of Moon's visibility. 4. Preliminaries for computation. 5. Visibility corrections: Ākṣa, Āyana and the Third. 6. Rising and setting of the Moon. 7. Moon's shadow. 8. Computation of Moon's cusps. 9. Moon's cusps—diagram.

##### 18. Heliacal rising and setting of Planets and Stars ... 254

1. Heliacal rising and setting of planets. 2. Days of rising and setting. 3. Planetary elongation for rising and setting. 4. Visibility corrections. 5. Computation of rising and setting. 6. Jupiter's rising and setting. 7. Venus: Rising and setting. 8. Rising and setting of a star. 9. Canopus: Rising.

##### 19. Conjunction of Planets ... 264

1. Types of planetary conjunctions. 2. Conjunction: Principle of computation. 3. Computation of conjunction.

##### 20. Conjunction of Stars and Planets ... 271

1. Conjunction of stars and planets. 2. Principle of planet-star conjunction. 3. Occultation of stars by planets. 4. Occultation of Rohiṇī by planets. 5. Occultation of stars by the Moon. 6. Time of star-planet conjunction.

#### V. INNOVATIVE TRENDS

##### 21. Novel Innovations ... 274

1. True longitude computation on the sphere of the zodiac. 2. Computation of True Moon. 3. Simplified astronomical procedures.

*Siddhāntadīpikā* and of those observed and enumerated by me (Nīlakaṇṭha) in various contexts, compute: (i) the mean Sun etc., as directed by Parameśvara, (ii) their true positions as directed by Śrīpati and (iii) by the special process explained by me in my (*Bhāṣya*) on the *Kālakriyā* and *Gola pādas* of the *Āryabhaṭīya*.

Take as the first case the following instance:

‘On Kali day 16,43,524, (at a solar eclipse), the gnomonic shadow at commencement was eleven and the end (of the eclipse) occurred in the afternoon.’

Here the *ahargana* referred to is at sunrise preceding the eclipse. The mean Sun then is  $0^{\circ} 11' 57'' 15''$ , correct to seconds. The mean Moon correct to minutes is  $7^{\circ} 4' 15''$ . The Moon's Higher Apsis is  $7^{\circ} 7' 14''$ .

The commencement of the eclipse is to be tested first, since it has been stated that ‘the gnomonic shadow is eleven at commencement.’ There too the process of successive approximation has to be done. The rough time elapsed after sunrise might be understood from the measure of the shadow. That comes to 5 *nādikās*, 40 *vinādikās*. Now, at *Aśvatthagrāma*, on the bank of river Nīlā, the *deśāntara* (longitudinal time difference) is 20 *vinādis*, positive. The Equinoctial shadow is 2 *āṅgulas* and 18 *vyāṅgulas*. The sum of *deśāntara* and time elapsed after sunrise is 6 *nādis*. (The longitude for) the motion thereof should be added to the longitude at sunrise. The mean Sun would then be  $7^{\circ} 12' 3'' 12''$ . This is not for six *nādis* after the local sunrise but for that of the *ghaṭikāmaṇḍala* at the western horizon at  $180^{\circ}$  from *Laṅkā* at the junction at the local N-S line, the horizon and the Equatorial E-W line. This is from the rise at a place having the longitude of mean Sun, but not from the time of sunrise. The difference in motion in terms of *prāṇas* of mean Sun and the corresponding true Sun has now to be applied in toto to the mean, it being positive if the true *prāṇas* are greater, and negative if less. The true *prāṇas* are calculated for the first quadrant using the formula enunciated in the verse *iṣṭajyāgunita* etc. and added to six. In the second quadrant it has to be subtracted from six *rāśis*. In the third, it is to be added to six *rāśis*. In the fourth, it is to be subtracted from twelve *rāśis*. In places having latitude (i.e. north or south of the equator), *prāṇas* equal to half local ascensional difference have to be subtracted from the true *prāṇas* if (the Sun is in the six *rāśis*) beginning from Aries and added if beginning from Libra. The result would indicate the rising point of the *ghaṭikāmaṇḍala* at sunrise. The difference in minutes between this point and the mean Sun would be in *prāṇas*. In all cases these have to be multiplied by their respective rates of motion and divided by 21,600 and the resultant minutes applied to the respective

means. In the case of true longitudes, the multiplication is to be by the rates of true motion. For this purpose the true Sun has to be computed. Now, the *bhujāphala* (of the mean Sun found above, viz.,  $7^{\circ} 12' 3'' 12''$ ) is  $78' (1^{\circ} 18')$ . (Applying this to the mean), the true Sun is  $7^{\circ} 10' 45'' 12''$ . To this the precession of the equinoxes has to be applied and the *prāṇas* of ascensional differences are to be derived.<sup>1</sup> (KVS)

#### केरलीय-गोविन्दशिष्यपरम्परा

2. 9. 1. 1. ‘गोविन्दन्’ तलक्कुळत्तूर् भट्टतिरि । ‘रक्षेत् गोविन्दमर्कः’ एषु अद्देहत्तिन्टे जननकलि । केरलेश्वरसमीपत्तु इल्लं आकुञ्चु ॥ . . . .

2. ‘परमेश्वरन्’ वटशेशेरि नम्पूरि । निलायाः सौम्य-तीरस्थः परमेश्वरः । . . .

3. अस्य तनयो ‘दामोदरः’ ।

4. अस्य शिष्यो ‘नीलकण्ठसोमयाजी’ । इद्देहं तन्त्रसंग्रहं आर्यभटीयभाष्यम् मुतलाय ग्रन्थङ्कड्ळक्कु कर्तावाकुञ्चु । ‘लक्ष्मीश-निहितध्यानैः’ इत्यस्य कलिना कालनिर्णयः ।

5. पूर्वोक्तस्य दामोदरस्य शिष्यः ‘ज्येष्ठदेवः’ । इद्देहं परङ्कडोट्टु नम्पूरियाकुञ्चु । युक्तिभाषाग्रन्थत्ते उण्टाक्कियत्तुं इद्देहं तन्त्रे ।

6. ज्येष्ठदेवन्टे शिष्यन् तूक्कण्टियूर् ‘अच्युतपिषारटि’ । इद्देहं स्फुटनिर्णयं, गोलदीपिक मुतलाय ग्रन्थकर्तावाकुञ्चु । . . . .

(ओरु ज्योतिषग्रन्थवरि, Ms. Baroda 9886)

‘राम’नेल्लेलाटवुं विश्वतनायिट्टिभि-

रामनामाशासितावेन्नुळ्ळ कीर्तियोट्टुम् ।

गुरुदैवज्ञन्माकुं गुरुभूतनामेन्टे

गुरुवां पिताविन्टे चरणाभ्बुजं वन्दे ॥ १ ॥

गुरुविन् गुरु ‘व्याघ्रमुखमन्दिरवासि’

गुरुकारुण्यशालि तन्त्रेयुं वणङ्कुन्नेन् ॥ २ ॥

तद्गुरुभूतनायिट्टेत्तयुं मनीषियाय्

हृद्गतभावज्ञनाय् गणिततत्त्वज्ञनाय् ।

ताषात कीर्तियोट्टुं ‘नावायिक्कुळत्तुळ्ळो-

राषातिप्रवरनां गुरुवे वन्दिक्कुन्नेन् ॥ ३ ॥

आयवन् तन्टे गुरुभूतनायुळ्ळ देह-

मायतमतिकळाल् पूजितनायुळ्ळवन् ।

कोलत्तुनाट्टु ‘तृप्पाणिककरप्पोतुवाळ’-

क्कालत्तेगुरुवरन्मारिल् वच्चग्रेसरन् ॥ ४ ॥

एषुटे गुरुविन्टे गुरुविन् गुरुभूतन् ।

तन्नुटे गुरुवाकुं तत्पदं वणङ्कुन्नेन् ॥ ५ ॥

पोतुवाळिन्टे गुरु‘वच्युतपिषारटि’-

यतिमानुषनवन् सकलविद्यात्मकन् ।

<sup>1</sup> For various and other allied revisions, see *Jyotirmīmāṃsā*: KVS, pp. 36 ff.



#### IV. OCCULTATION

##### 16. Eclipses ... 196

1. Cause stated in the Ṛgveda. 2. Cause of the lunar eclipse. 3. Lunar eclipse: Principle of computation. 4. Lunar eclipse computation: Vāsiṣṭha and Pauliṣa. 5. —Saurasiddhānta. 6. —Āryabhaṭīya. 7. —Āryabhaṭa's Midnight system. 8. —Emendation by Brahmagupta. 9. —Bhāskara I. 10. —Lalla. 11. —Bhāskara II. 12. —Karaṇaratna. 13. —Śrīpati. 14. —Vākyakaraṇa. 15. —Grahalāghava. 16. Lunar eclipse diagram: Vāsiṣṭha Pauliṣa. 17. —Āryabhaṭa's Midnight system. 18. —Bhāskara I. 19. —Lalla. 20. —Sūryasiddhānta. 21. —Bhāskara II. 22. —Karaṇaratna. 23. Solar eclipse: Computation: Pauliṣa. 24. —Romakasiddhānta. 25. —Saurasiddhānta. 26. —Āryabhaṭa's Midnight system. 27. —Bhāskara I. 28. —Lalla. 29. —Mahāsiddhānta. 30. —Bhāskara II. 31. —Karaṇaratna. 32. —Śrīpati. 33. —Grahalāghava. 34. —Solar eclipse diagram: Romakasiddhānta. 35. —Saurasiddhānta. 36. Colour of eclipses. 37. Conditions for non-prediction of eclipses. 38. —Inscriptional references: Lunar eclipses. 38. Solar eclipses.

##### 17. Phases of the Moon ... 241

1. Periodical appearance of the Moon. 2. Moon's luminosity. 3. Conditions of Moon's visibility. 4. Preliminaries for computation. 5. Visibility corrections: Ākṣa, Āyana and the Third. 6. Rising and setting of the Moon. 7. Moon's shadow. 8. Computation of Moon's cusps. 9. Moon's cusps—diagram.

##### 18. Heliacal rising and setting of Planets and Stars ... 254

1. Heliacal rising and setting of planets. 2. Days of rising and setting. 3. Planetary elongation for rising and setting. 4. Visibility corrections. 5. Computation of rising and setting. 6. Jupiter's rising and setting. 7. Venus: Rising and setting. 8. Rising and setting of a star. 9. Canopus: Rising.

##### 19. Conjunction of Planets ... 264

1. Types of planetary conjunctions. 2. Conjunction: Principle of computation. 3. Computation of conjunction.

##### 20. Conjunction of Stars and Planets ... 271

1. Conjunction of stars and planets. 2. Principle of planet-star conjunction. 3. Occultation of stars by planets. 4. Occultation of Rohiṇī by planets. 5. Occultation of stars by the Moon. 6. Time of star-planet conjunction.

#### V. INNOVATIVE TRENDS

##### 21. Novel Innovations ... 274

1. True longitude computation on the sphere of the zodiac. 2. Computation of True Moon. 3. Simplified astronomical procedures.

#### IV. OCCULTATION

##### 16. Eclipses ... 196

1. Cause stated in the Ṛgveda. 2. Cause of the lunar eclipse. 3. Lunar eclipse: Principle of computation. 4. Lunar eclipse computation: Vāsiṣṭha and Pauliṣa. 5. —Saurasiddhānta. 6. —Āryabhaṭīya. 7. —Āryabhaṭa's Midnight system. 8. —Emendation by Brahmagupta. 9. —Bhāskara I. 10. —Lalla. 11. —Bhāskara II. 12. —Karaṇaratna. 13. —Śrīpati. 14. —Vākyakaraṇa. 15. —Grahalāghava. 16. Lunar eclipse diagram: Vāsiṣṭha Pauliṣa. 17. —Āryabhaṭa's Midnight system. 18. —Bhāskara I. 19. —Lalla. 20. —Sūryasiddhānta. 21. —Bhāskara II. 22. —Karaṇaratna. 23. Solar eclipse: Computation: Pauliṣa. 24. —Romakasiddhānta. 25. —Saurasiddhānta. 26. —Āryabhaṭa's Midnight system. 27. —Bhāskara I. 28. —Lalla. 29. —Mahāsiddhānta. 30. —Bhāskara II. 31. —Karaṇaratna. 32. —Śrīpati. 33. —Grahalāghava. 34. —Solar eclipse diagram: Romakasiddhānta. 35. —Saurasiddhānta. 36. Colour of eclipses. 37. Conditions for non-prediction of eclipses. 38. —Inscriptional references: Lunar eclipses. 38. Solar eclipses.

##### 17. Phases of the Moon ... 241

1. Periodical appearance of the Moon. 2. Moon's luminosity. 3. Conditions of Moon's visibility. 4. Preliminaries for computation. 5. Visibility corrections: Ākṣa, Āyana and the Third. 6. Rising and setting of the Moon. 7. Moon's shadow. 8. Computation of Moon's cusps. 9. Moon's cusps—diagram.

##### 18. Heliacal rising and setting of Planets and Stars ... 254

1. Heliacal rising and setting of planets. 2. Days of rising and setting. 3. Planetary elongation for rising and setting. 4. Visibility corrections. 5. Computation of rising and setting. 6. Jupiter's rising and setting. 7. Venus: Rising and setting. 8. Rising and setting of a star. 9. Canopus: Rising.

##### 19. Conjunction of Planets ... 264

1. Types of planetary conjunctions. 2. Conjunction: Principle of computation. 3. Computation of conjunction.

##### 20. Conjunction of Stars and Planets ... 271

1. Conjunction of stars and planets. 2. Principle of planet-star conjunction. 3. Occultation of stars by planets. 4. Occultation of Rohiṇī by planets. 5. Occultation of stars by the Moon. 6. Time of star-planet conjunction.

#### V. INNOVATIVE TRENDS

##### 21. Novel Innovations ... 274

1. True longitude computation on the sphere of the zodiac. 2. Computation of True Moon. 3. Simplified astronomical procedures.

#### IV. OCCULTATION

##### 16. Eclipses ... 196

1. Cause stated in the Ṛgveda. 2. Cause of the lunar eclipse. 3. Lunar eclipse: Principle of computation. 4. Lunar eclipse computation: Vāsiṣṭha and Pauliṣa. 5. —Saurasiddhānta. 6. —Āryabhaṭīya. 7. —Āryabhaṭa's Midnight system. 8. —Emendation by Brahmagupta. 9. —Bhāskara I. 10. —Lalla. 11. —Bhāskara II. 12. —Karaṇaratna. 13. —Śrīpati. 14. —Vākyakaraṇa. 15. —Grahalāghava. 16. Lunar eclipse diagram: Vāsiṣṭha Pauliṣa. 17. —Āryabhaṭa's Midnight system. 18. —Bhāskara I. 19. —Lalla. 20. —Sūryasiddhānta. 21. —Bhāskara II. 22. —Karaṇaratna. 23. Solar eclipse: Computation: Pauliṣa. 24. —Romakasiddhānta. 25. —Saurasiddhānta. 26. —Āryabhaṭa's Midnight system. 27. —Bhāskara I. 28. —Lalla. 29. —Mahāsiddhānta. 30. —Bhāskara II. 31. —Karaṇaratna. 32. —Śrīpati. 33. —Grahalāghava. 34. —Solar eclipse diagram: Romakasiddhānta. 35. —Saurasiddhānta. 36. Colour of eclipses. 37. Conditions for non-prediction of eclipses. 38. —Inscriptional references: Lunar eclipses. 38. Solar eclipses.

##### 17. Phases of the Moon ... 241

1. Periodical appearance of the Moon. 2. Moon's luminosity. 3. Conditions of Moon's visibility. 4. Preliminaries for computation. 5. Visibility corrections: Ākṣa, Āyana and the Third. 6. Rising and setting of the Moon. 7. Moon's shadow. 8. Computation of Moon's cusps. 9. Moon's cusps—diagram.

##### 18. Heliacal rising and setting of Planets and Stars ... 254

1. Heliacal rising and setting of planets. 2. Days of rising and setting. 3. Planetary elongation for rising and setting. 4. Visibility corrections. 5. Computation of rising and setting. 6. Jupiter's rising and setting. 7. Venus: Rising and setting. 8. Rising and setting of a star. 9. Canopus: Rising.

##### 19. Conjunction of Planets ... 264

1. Types of planetary conjunctions. 2. Conjunction: Principle of computation. 3. Computation of conjunction.

##### 20. Conjunction of Stars and Planets ... 271

1. Conjunction of stars and planets. 2. Principle of planet-star conjunction. 3. Occultation of stars by planets. 4. Occultation of Rohiṇī by planets. 5. Occultation of stars by the Moon. 6. Time of star-planet conjunction.

#### V. INNOVATIVE TRENDS

##### 21. Novel Innovations ... 274

1. True longitude computation on the sphere of the zodiac. 2. Computation of True Moon. 3. Simplified astronomical procedures.

#### IV. OCCULTATION

##### 16. Eclipses ... 196

1. Cause stated in the Ṛgveda. 2. Cause of the lunar eclipse. 3. Lunar eclipse: Principle of computation. 4. Lunar eclipse computation: Vāsiṣṭha and Pauliṣa. 5. —Saurasiddhānta. 6. —Āryabhaṭīya. 7. —Āryabhaṭa's Midnight system. 8. —Emendation by Brahmagupta. 9. —Bhāskara I. 10. —Lalla. 11. —Bhāskara II. 12. —Karaṇaratna. 13. —Śrīpati. 14. —Vākyakaraṇa. 15. —Grahalāghava. 16. Lunar eclipse diagram: Vāsiṣṭha Pauliṣa. 17. —Āryabhaṭa's Midnight system. 18. —Bhāskara I. 19. —Lalla. 20. —Sūryasiddhānta. 21. —Bhāskara II. 22. —Karaṇaratna. 23. Solar eclipse: Computation: Pauliṣa. 24. —Romakasiddhānta. 25. —Saurasiddhānta. 26. —Āryabhaṭa's Midnight system. 27. —Bhāskara I. 28. —Lalla. 29. —Mahāsiddhānta. 30. —Bhāskara II. 31. —Karaṇaratna. 32. —Śrīpati. 33. —Grahalāghava. 34. —Solar eclipse diagram: Romakasiddhānta. 35. —Saurasiddhānta. 36. Colour of eclipses. 37. Conditions for non-prediction of eclipses. 38. —Inscriptional references: Lunar eclipses. 38. Solar eclipses.

##### 17. Phases of the Moon ... 241

1. Periodical appearance of the Moon. 2. Moon's luminosity. 3. Conditions of Moon's visibility. 4. Preliminaries for computation. 5. Visibility corrections: Ākṣa, Āyana and the Third. 6. Rising and setting of the Moon. 7. Moon's shadow. 8. Computation of Moon's cusps. 9. Moon's cusps—diagram.

##### 18. Heliacal rising and setting of Planets and Stars ... 254

1. Heliacal rising and setting of planets. 2. Days of rising and setting. 3. Planetary elongation for rising and setting. 4. Visibility corrections. 5. Computation of rising and setting. 6. Jupiter's rising and setting. 7. Venus: Rising and setting. 8. Rising and setting of a star. 9. Canopus: Rising.

##### 19. Conjunction of Planets ... 264

1. Types of planetary conjunctions. 2. Conjunction: Principle of computation. 3. Computation of conjunction.

##### 20. Conjunction of Stars and Planets ... 271

1. Conjunction of stars and planets. 2. Principle of planet-star conjunction. 3. Occultation of stars by planets. 4. Occultation of Rohiṇī by planets. 5. Occultation of stars by the Moon. 6. Time of star-planet conjunction.

#### V. INNOVATIVE TRENDS

##### 21. Novel Innovations ... 274

1. True longitude computation on the sphere of the zodiac. 2. Computation of True Moon. 3. Simplified astronomical procedures.

#### IV. OCCULTATION

##### 16. Eclipses ... 196

1. Cause stated in the Ṛgveda. 2. Cause of the lunar eclipse. 3. Lunar eclipse: Principle of computation. 4. Lunar eclipse computation: Vāsiṣṭha and Pauliṣa. 5. —Saurasiddhānta. 6. —Āryabhaṭīya. 7. —Āryabhaṭa's Midnight system. 8. —Emendation by Brahmagupta. 9. —Bhāskara I. 10. —Lalla. 11. —Bhāskara II. 12. —Karaṇaratna. 13. —Śrīpati. 14. —Vākyakaraṇa. 15. —Grahalāghava. 16. Lunar eclipse diagram: Vāsiṣṭha Pauliṣa. 17. —Āryabhaṭa's Midnight system. 18. —Bhāskara I. 19. —Lalla. 20. —Sūryasiddhānta. 21. —Bhāskara II. 22. —Karaṇaratna. 23. Solar eclipse: Computation: Pauliṣa. 24. —Romakasiddhānta. 25. —Saurasiddhānta. 26. —Āryabhaṭa's Midnight system. 27. —Bhāskara I. 28. —Lalla. 29. —Mahāsiddhānta. 30. —Bhāskara II. 31. —Karaṇaratna. 32. —Śrīpati. 33. —Grahalāghava. 34. —Solar eclipse diagram: Romakasiddhānta. 35. —Saurasiddhānta. 36. Colour of eclipses. 37. Conditions for non-prediction of eclipses. 38. —Inscriptional references: Lunar eclipses. 38. Solar eclipses.

##### 17. Phases of the Moon ... 241

1. Periodical appearance of the Moon. 2. Moon's luminosity. 3. Conditions of Moon's visibility. 4. Preliminaries for computation. 5. Visibility corrections: Ākṣa, Āyana and the Third. 6. Rising and setting of the Moon. 7. Moon's shadow. 8. Computation of Moon's cusps. 9. Moon's cusps—diagram.

##### 18. Heliacal rising and setting of Planets and Stars ... 254

1. Heliacal rising and setting of planets. 2. Days of rising and setting. 3. Planetary elongation for rising and setting. 4. Visibility corrections. 5. Computation of rising and setting. 6. Jupiter's rising and setting. 7. Venus: Rising and setting. 8. Rising and setting of a star. 9. Canopus: Rising.

##### 19. Conjunction of Planets ... 264

1. Types of planetary conjunctions. 2. Conjunction: Principle of computation. 3. Computation of conjunction.

##### 20. Conjunction of Stars and Planets ... 271

1. Conjunction of stars and planets. 2. Principle of planet-star conjunction. 3. Occultation of stars by planets. 4. Occultation of Rohiṇī by planets. 5. Occultation of stars by the Moon. 6. Time of star-planet conjunction.

#### V. INNOVATIVE TRENDS

##### 21. Novel Innovations ... 274

1. True longitude computation on the sphere of the zodiac. 2. Computation of True Moon. 3. Simplified astronomical procedures.

#### IV. OCCULTATION

##### 16. Eclipses ... 196

1. Cause stated in the Ṛgveda. 2. Cause of the lunar eclipse. 3. Lunar eclipse: Principle of computation. 4. Lunar eclipse computation: Vāsiṣṭha and Pauliṣa. 5. —Saurasiddhānta. 6. —Āryabhaṭīya. 7. —Āryabhaṭa's Midnight system. 8. —Emendation by Brahmagupta. 9. —Bhāskara I. 10. —Lalla. 11. —Bhāskara II. 12. —Karaṇaratna. 13. —Śrīpati. 14. —Vākyakaraṇa. 15. —Grahalāghava. 16. Lunar eclipse diagram: Vāsiṣṭha Pauliṣa. 17. —Āryabhaṭa's Midnight system. 18. —Bhāskara I. 19. —Lalla. 20. —Sūryasiddhānta. 21. —Bhāskara II. 22. —Karaṇaratna. 23. Solar eclipse: Computation: Pauliṣa. 24. —Romakasiddhānta. 25. —Saurasiddhānta. 26. —Āryabhaṭa's Midnight system. 27. —Bhāskara I. 28. —Lalla. 29. —Mahāsiddhānta. 30. —Bhāskara II. 31. —Karaṇaratna. 32. —Śrīpati. 33. —Grahalāghava. 34. —Solar eclipse diagram: Romakasiddhānta. 35. —Saurasiddhānta. 36. Colour of eclipses. 37. Conditions for non-prediction of eclipses. 38. —Inscriptional references: Lunar eclipses. 38. Solar eclipses.

##### 17. Phases of the Moon ... 241

1. Periodical appearance of the Moon. 2. Moon's luminosity. 3. Conditions of Moon's visibility. 4. Preliminaries for computation. 5. Visibility corrections: Ākṣa, Āyana and the Third. 6. Rising and setting of the Moon. 7. Moon's shadow. 8. Computation of Moon's cusps. 9. Moon's cusps—diagram.

##### 18. Heliacal rising and setting of Planets and Stars ... 254

1. Heliacal rising and setting of planets. 2. Days of rising and setting. 3. Planetary elongation for rising and setting. 4. Visibility corrections. 5. Computation of rising and setting. 6. Jupiter's rising and setting. 7. Venus: Rising and setting. 8. Rising and setting of a star. 9. Canopus: Rising.

##### 19. Conjunction of Planets ... 264

1. Types of planetary conjunctions. 2. Conjunction: Principle of computation. 3. Computation of conjunction.

##### 20. Conjunction of Stars and Planets ... 271

1. Conjunction of stars and planets. 2. Principle of planet-star conjunction. 3. Occultation of stars by planets. 4. Occultation of Rohiṇī by planets. 5. Occultation of stars by the Moon. 6. Time of star-planet conjunction.

#### V. INNOVATIVE TRENDS

##### 21. Novel Innovations ... 274

1. True longitude computation on the sphere of the zodiac. 2. Computation of True Moon. 3. Simplified astronomical procedures.

#### IV. OCCULTATION

##### 16. Eclipses ... 196

1. Cause stated in the Ṛgveda. 2. Cause of the lunar eclipse. 3. Lunar eclipse: Principle of computation. 4. Lunar eclipse computation: Vāsiṣṭha and Pauliṣa. 5. —Saurasiddhānta. 6. —Āryabhaṭīya. 7. —Āryabhaṭa's Midnight system. 8. —Emendation by Brahmagupta. 9. —Bhāskara I. 10. —Lalla. 11. —Bhāskara II. 12. —Karaṇaratna. 13. —Śrīpati. 14. —Vākyakaraṇa. 15. —Grahalāghava. 16. Lunar eclipse diagram: Vāsiṣṭha Pauliṣa. 17. —Āryabhaṭa's Midnight system. 18. —Bhāskara I. 19. —Lalla. 20. —Sūryasiddhānta. 21. —Bhāskara II. 22. —Karaṇaratna. 23. Solar eclipse: Computation: Pauliṣa. 24. —Romakasiddhānta. 25. —Saurasiddhānta. 26. —Āryabhaṭa's Midnight system. 27. —Bhāskara I. 28. —Lalla. 29. —Mahāsiddhānta. 30. —Bhāskara II. 31. —Karaṇaratna. 32. —Śrīpati. 33. —Grahalāghava. 34. —Solar eclipse diagram: Romakasiddhānta. 35. —Saurasiddhānta. 36. Colour of eclipses. 37. Conditions for non-prediction of eclipses. 38. —Inscriptional references: Lunar eclipses. 38. Solar eclipses.

##### 17. Phases of the Moon ... 241

1. Periodical appearance of the Moon. 2. Moon's luminosity. 3. Conditions of Moon's visibility. 4. Preliminaries for computation. 5. Visibility corrections: Ākṣa, Āyana and the Third. 6. Rising and setting of the Moon. 7. Moon's shadow. 8. Computation of Moon's cusps. 9. Moon's cusps—diagram.

##### 18. Heliacal rising and setting of Planets and Stars ... 254

1. Heliacal rising and setting of planets. 2. Days of rising and setting. 3. Planetary elongation for rising and setting. 4. Visibility corrections. 5. Computation of rising and setting. 6. Jupiter's rising and setting. 7. Venus: Rising and setting. 8. Rising and setting of a star. 9. Canopus: Rising.

##### 19. Conjunction of Planets ... 264

1. Types of planetary conjunctions. 2. Conjunction: Principle of computation. 3. Computation of conjunction.

##### 20. Conjunction of Stars and Planets ... 271

1. Conjunction of stars and planets. 2. Principle of planet-star conjunction. 3. Occultation of stars by planets. 4. Occultation of Rohiṇī by planets. 5. Occultation of stars by the Moon. 6. Time of star-planet conjunction.

#### V. INNOVATIVE TRENDS

##### 21. Novel Innovations ... 274

1. True longitude computation on the sphere of the zodiac. 2. Computation of True Moon. 3. Simplified astronomical procedures.

#### IV. OCCULTATION

##### 16. Eclipses ... 196

1. Cause stated in the Ṛgveda. 2. Cause of the lunar eclipse. 3. Lunar eclipse: Principle of computation. 4. Lunar eclipse computation: Vāsiṣṭha and Pauliṣa. 5. —Saurasiddhānta. 6. —Āryabhaṭīya. 7. —Āryabhaṭa's Midnight system. 8. —Emendation by Brahmagupta. 9. —Bhāskara I. 10. —Lalla. 11. —Bhāskara II. 12. —Karaṇaratna. 13. —Śrīpati. 14. —Vākyakaraṇa. 15. —Grahalāghava. 16. Lunar eclipse diagram: Vāsiṣṭha Pauliṣa. 17. —Āryabhaṭa's Midnight system. 18. —Bhāskara I. 19. —Lalla. 20. —Sūryasiddhānta. 21. —Bhāskara II. 22. —Karaṇaratna. 23. Solar eclipse: Computation: Pauliṣa. 24. —Romakasiddhānta. 25. —Saurasiddhānta. 26. —Āryabhaṭa's Midnight system. 27. —Bhāskara I. 28. —Lalla. 29. —Mahāsiddhānta. 30. —Bhāskara II. 31. —Karaṇaratna. 32. —Śrīpati. 33. —Grahalāghava. 34. —Solar eclipse diagram: Romakasiddhānta. 35. —Saurasiddhānta. 36. Colour of eclipses. 37. Conditions for non-prediction of eclipses. 38. —Inscriptional references: Lunar eclipses. 38. Solar eclipses.

##### 17. Phases of the Moon ... 241

1. Periodical appearance of the Moon. 2. Moon's luminosity. 3. Conditions of Moon's visibility. 4. Preliminaries for computation. 5. Visibility corrections: Ākṣa, Āyana and the Third. 6. Rising and setting of the Moon. 7. Moon's shadow. 8. Computation of Moon's cusps. 9. Moon's cusps—diagram.

##### 18. Heliacal rising and setting of Planets and Stars ... 254

1. Heliacal rising and setting of planets. 2. Days of rising and setting. 3. Planetary elongation for rising and setting. 4. Visibility corrections. 5. Computation of rising and setting. 6. Jupiter's rising and setting. 7. Venus: Rising and setting. 8. Rising and setting of a star. 9. Canopus: Rising.

##### 19. Conjunction of Planets ... 264

1. Types of planetary conjunctions. 2. Conjunction: Principle of computation. 3. Computation of conjunction.

##### 20. Conjunction of Stars and Planets ... 271

1. Conjunction of stars and planets. 2. Principle of planet-star conjunction. 3. Occultation of stars by planets. 4. Occultation of Rohiṇī by planets. 5. Occultation of stars by the Moon. 6. Time of star-planet conjunction.

#### V. INNOVATIVE TRENDS

##### 21. Novel Innovations ... 274

1. True longitude computation on the sphere of the zodiac. 2. Computation of True Moon. 3. Simplified astronomical procedures.



#### IV. OCCULTATION

##### 16. Eclipses ... 196

1. Cause stated in the Ṛgveda. 2. Cause of the lunar eclipse. 3. Lunar eclipse: Principle of computation. 4. Lunar eclipse computation: Vāsiṣṭha and Pauliṣa. 5. —Saurasiddhānta. 6. —Āryabhaṭīya. 7. —Āryabhaṭa's Midnight system. 8. —Emendation by Brahmagupta. 9. —Bhāskara I. 10. —Lalla. 11. —Bhāskara II. 12. —Karaṇaratna. 13. —Śrīpati. 14. —Vākyakaraṇa. 15. —Grahalāghava. 16. Lunar eclipse diagram: Vāsiṣṭha Pauliṣa. 17. —Āryabhaṭa's Midnight system. 18. —Bhāskara I. 19. —Lalla. 20. —Sūryasiddhānta. 21. —Bhāskara II. 22. —Karaṇaratna. 23. Solar eclipse: Computation: Pauliṣa. 24. —Romakasiddhānta. 25. —Saurasiddhānta. 26. —Āryabhaṭa's Midnight system. 27. —Bhāskara I. 28. —Lalla. 29. —Mahāsiddhānta. 30. —Bhāskara II. 31. —Karaṇaratna. 32. —Śrīpati. 33. —Grahalāghava. 34. —Solar eclipse diagram: Romakasiddhānta. 35. —Saurasiddhānta. 36. Colour of eclipses. 37. Conditions for non-prediction of eclipses. 38. —Inscriptional references: Lunar eclipses. 38. Solar eclipses.

##### 17. Phases of the Moon ... 241

1. Periodical appearance of the Moon. 2. Moon's luminosity. 3. Conditions of Moon's visibility. 4. Preliminaries for computation. 5. Visibility corrections: Ākṣa, Āyana and the Third. 6. Rising and setting of the Moon. 7. Moon's shadow. 8. Computation of Moon's cusps. 9. Moon's cusps—diagram.

##### 18. Heliacal rising and setting of Planets and Stars ... 254

1. Heliacal rising and setting of planets. 2. Days of rising and setting. 3. Planetary elongation for rising and setting. 4. Visibility corrections. 5. Computation of rising and setting. 6. Jupiter's rising and setting. 7. Venus: Rising and setting. 8. Rising and setting of a star. 9. Canopus: Rising.

##### 19. Conjunction of Planets ... 264

1. Types of planetary conjunctions. 2. Conjunction: Principle of computation. 3. Computation of conjunction.

##### 20. Conjunction of Stars and Planets ... 271

1. Conjunction of stars and planets. 2. Principle of planet-star conjunction. 3. Occultation of stars by planets. 4. Occultation of Rohiṇī by planets. 5. Occultation of stars by the Moon. 6. Time of star-planet conjunction.

#### V. INNOVATIVE TRENDS

##### 21. Novel Innovations ... 274

1. True longitude computation on the sphere of the zodiac. 2. Computation of True Moon. 3. Simplified astronomical procedures.

#### IV. OCCULTATION

##### 16. Eclipses ... 196

1. Cause stated in the Ṛgveda. 2. Cause of the lunar eclipse. 3. Lunar eclipse: Principle of computation. 4. Lunar eclipse computation: Vāsiṣṭha and Pauliṣa. 5. —Saurasiddhānta. 6. —Āryabhaṭīya. 7. —Āryabhaṭa's Midnight system. 8. —Emendation by Brahmagupta. 9. —Bhāskara I. 10. —Lalla. 11. —Bhāskara II. 12. —Karaṇaratna. 13. —Śrīpati. 14. —Vākyakaraṇa. 15. —Grahalāghava. 16. Lunar eclipse diagram: Vāsiṣṭha Pauliṣa. 17. —Āryabhaṭa's Midnight system. 18. —Bhāskara I. 19. —Lalla. 20. —Sūryasiddhānta. 21. —Bhāskara II. 22. —Karaṇaratna. 23. Solar eclipse: Computation: Pauliṣa. 24. —Romakasiddhānta. 25. —Saurasiddhānta. 26. —Āryabhaṭa's Midnight system. 27. —Bhāskara I. 28. —Lalla. 29. —Mahāsiddhānta. 30. —Bhāskara II. 31. —Karaṇaratna. 32. —Śrīpati. 33. —Grahalāghava. 34. —Solar eclipse diagram: Romakasiddhānta. 35. —Saurasiddhānta. 36. Colour of eclipses. 37. Conditions for non-prediction of eclipses. 38. —Inscriptional references: Lunar eclipses. 38. Solar eclipses.

##### 17. Phases of the Moon ... 241

1. Periodical appearance of the Moon. 2. Moon's luminosity. 3. Conditions of Moon's visibility. 4. Preliminaries for computation. 5. Visibility corrections: Ākṣa, Āyana and the Third. 6. Rising and setting of the Moon. 7. Moon's shadow. 8. Computation of Moon's cusps. 9. Moon's cusps—diagram.

##### 18. Heliacal rising and setting of Planets and Stars ... 254

1. Heliacal rising and setting of planets. 2. Days of rising and setting. 3. Planetary elongation for rising and setting. 4. Visibility corrections. 5. Computation of rising and setting. 6. Jupiter's rising and setting. 7. Venus: Rising and setting. 8. Rising and setting of a star. 9. Canopus: Rising.

##### 19. Conjunction of Planets ... 264

1. Types of planetary conjunctions. 2. Conjunction: Principle of computation. 3. Computation of conjunction.

##### 20. Conjunction of Stars and Planets ... 271

1. Conjunction of stars and planets. 2. Principle of planet-star conjunction. 3. Occultation of stars by planets. 4. Occultation of Rohiṇī by planets. 5. Occultation of stars by the Moon. 6. Time of star-planet conjunction.

#### V. INNOVATIVE TRENDS

##### 21. Novel Innovations ... 274

1. True longitude computation on the sphere of the zodiac. 2. Computation of True Moon. 3. Simplified astronomical procedures.

#### IV. OCCULTATION

##### 16. Eclipses ... 196

1. Cause stated in the Ṛgveda. 2. Cause of the lunar eclipse. 3. Lunar eclipse: Principle of computation. 4. Lunar eclipse computation: Vāsiṣṭha and Pauliṣa. 5. —Saurasiddhānta. 6. —Āryabhaṭīya. 7. —Āryabhaṭa's Midnight system. 8. —Emendation by Brahmagupta. 9. —Bhāskara I. 10. —Lalla. 11. —Bhāskara II. 12. —Karaṇaratna. 13. —Śrīpati. 14. —Vākyakaraṇa. 15. —Grahalāghava. 16. Lunar eclipse diagram: Vāsiṣṭha Pauliṣa. 17. —Āryabhaṭa's Midnight system. 18. —Bhāskara I. 19. —Lalla. 20. —Sūryasiddhānta. 21. —Bhāskara II. 22. —Karaṇaratna. 23. Solar eclipse: Computation: Pauliṣa. 24. —Romakasiddhānta. 25. —Saurasiddhānta. 26. —Āryabhaṭa's Midnight system. 27. —Bhāskara I. 28. —Lalla. 29. —Mahāsiddhānta. 30. —Bhāskara II. 31. —Karaṇaratna. 32. —Śrīpati. 33. —Grahalāghava. 34. —Solar eclipse diagram: Romakasiddhānta. 35. —Saurasiddhānta. 36. Colour of eclipses. 37. Conditions for non-prediction of eclipses. 38. —Inscriptional references: Lunar eclipses. 38. Solar eclipses.

##### 17. Phases of the Moon ... 241

1. Periodical appearance of the Moon. 2. Moon's luminosity. 3. Conditions of Moon's visibility. 4. Preliminaries for computation. 5. Visibility corrections: Ākṣa, Āyana and the Third. 6. Rising and setting of the Moon. 7. Moon's shadow. 8. Computation of Moon's cusps. 9. Moon's cusps—diagram.

##### 18. Heliacal rising and setting of Planets and Stars ... 254

1. Heliacal rising and setting of planets. 2. Days of rising and setting. 3. Planetary elongation for rising and setting. 4. Visibility corrections. 5. Computation of rising and setting. 6. Jupiter's rising and setting. 7. Venus: Rising and setting. 8. Rising and setting of a star. 9. Canopus: Rising.

##### 19. Conjunction of Planets ... 264

1. Types of planetary conjunctions. 2. Conjunction: Principle of computation. 3. Computation of conjunction.

##### 20. Conjunction of Stars and Planets ... 271

1. Conjunction of stars and planets. 2. Principle of planet-star conjunction. 3. Occultation of stars by planets. 4. Occultation of Rohiṇī by planets. 5. Occultation of stars by the Moon. 6. Time of star-planet conjunction.

#### V. INNOVATIVE TRENDS

##### 21. Novel Innovations ... 274

1. True longitude computation on the sphere of the zodiac. 2. Computation of True Moon. 3. Simplified astronomical procedures.

#### IV. OCCULTATION

##### 16. Eclipses ... 196

1. Cause stated in the Ṛgveda. 2. Cause of the lunar eclipse. 3. Lunar eclipse: Principle of computation. 4. Lunar eclipse computation: Vāsiṣṭha and Pauliṣa. 5. —Saurasiddhānta. 6. —Āryabhaṭīya. 7. —Āryabhaṭa's Midnight system. 8. —Emendation by Brahmagupta. 9. —Bhāskara I. 10. —Lalla. 11. —Bhāskara II. 12. —Karaṇaratna. 13. —Śrīpati. 14. —Vākyakaraṇa. 15. —Grahalāghava. 16. Lunar eclipse diagram: Vāsiṣṭha Pauliṣa. 17. —Āryabhaṭa's Midnight system. 18. —Bhāskara I. 19. —Lalla. 20. —Sūryasiddhānta. 21. —Bhāskara II. 22. —Karaṇaratna. 23. Solar eclipse: Computation: Pauliṣa. 24. —Romakasiddhānta. 25. —Saurasiddhānta. 26. —Āryabhaṭa's Midnight system. 27. —Bhāskara I. 28. —Lalla. 29. —Mahāsiddhānta. 30. —Bhāskara II. 31. —Karaṇaratna. 32. —Śrīpati. 33. —Grahalāghava. 34. —Solar eclipse diagram: Romakasiddhānta. 35. —Saurasiddhānta. 36. Colour of eclipses. 37. Conditions for non-prediction of eclipses. 38. —Inscriptional references: Lunar eclipses. 38. Solar eclipses.

##### 17. Phases of the Moon ... 241

1. Periodical appearance of the Moon. 2. Moon's luminosity. 3. Conditions of Moon's visibility. 4. Preliminaries for computation. 5. Visibility corrections: Ākṣa, Āyana and the Third. 6. Rising and setting of the Moon. 7. Moon's shadow. 8. Computation of Moon's cusps. 9. Moon's cusps—diagram.

##### 18. Heliacal rising and setting of Planets and Stars ... 254

1. Heliacal rising and setting of planets. 2. Days of rising and setting. 3. Planetary elongation for rising and setting. 4. Visibility corrections. 5. Computation of rising and setting. 6. Jupiter's rising and setting. 7. Venus: Rising and setting. 8. Rising and setting of a star. 9. Canopus: Rising.

##### 19. Conjunction of Planets ... 264

1. Types of planetary conjunctions. 2. Conjunction: Principle of computation. 3. Computation of conjunction.

##### 20. Conjunction of Stars and Planets ... 271

1. Conjunction of stars and planets. 2. Principle of planet-star conjunction. 3. Occultation of stars by planets. 4. Occultation of Rohiṇī by planets. 5. Occultation of stars by the Moon. 6. Time of star-planet conjunction.

#### V. INNOVATIVE TRENDS

##### 21. Novel Innovations ... 274

1. True longitude computation on the sphere of the zodiac. 2. Computation of True Moon. 3. Simplified astronomical procedures.

#### IV. OCCULTATION

##### 16. Eclipses ... 196

1. Cause stated in the Ṛgveda. 2. Cause of the lunar eclipse. 3. Lunar eclipse: Principle of computation. 4. Lunar eclipse computation: Vāsiṣṭha and Pauliṣa. 5. —Saurasiddhānta. 6. —Āryabhaṭīya. 7. —Āryabhaṭa's Midnight system. 8. —Emendation by Brahmagupta. 9. —Bhāskara I. 10. —Lalla. 11. —Bhāskara II. 12. —Karaṇaratna. 13. —Śrīpati. 14. —Vākyakaraṇa. 15. —Grahalāghava. 16. Lunar eclipse diagram: Vāsiṣṭha Pauliṣa. 17. —Āryabhaṭa's Midnight system. 18. —Bhāskara I. 19. —Lalla. 20. —Sūryasiddhānta. 21. —Bhāskara II. 22. —Karaṇaratna. 23. Solar eclipse: Computation: Pauliṣa. 24. —Romakasiddhānta. 25. —Saurasiddhānta. 26. —Āryabhaṭa's Midnight system. 27. —Bhāskara I. 28. —Lalla. 29. —Mahāsiddhānta. 30. —Bhāskara II. 31. —Karaṇaratna. 32. —Śrīpati. 33. —Grahalāghava. 34. —Solar eclipse diagram: Romakasiddhānta. 35. —Saurasiddhānta. 36. Colour of eclipses. 37. Conditions for non-prediction of eclipses. 38. —Inscriptional references: Lunar eclipses. 38. Solar eclipses.

##### 17. Phases of the Moon ... 241

1. Periodical appearance of the Moon. 2. Moon's luminosity. 3. Conditions of Moon's visibility. 4. Preliminaries for computation. 5. Visibility corrections: Ākṣa, Āyana and the Third. 6. Rising and setting of the Moon. 7. Moon's shadow. 8. Computation of Moon's cusps. 9. Moon's cusps—diagram.

##### 18. Heliacal rising and setting of Planets and Stars ... 254

1. Heliacal rising and setting of planets. 2. Days of rising and setting. 3. Planetary elongation for rising and setting. 4. Visibility corrections. 5. Computation of rising and setting. 6. Jupiter's rising and setting. 7. Venus: Rising and setting. 8. Rising and setting of a star. 9. Canopus: Rising.

##### 19. Conjunction of Planets ... 264

1. Types of planetary conjunctions. 2. Conjunction: Principle of computation. 3. Computation of conjunction.

##### 20. Conjunction of Stars and Planets ... 271

1. Conjunction of stars and planets. 2. Principle of planet-star conjunction. 3. Occultation of stars by planets. 4. Occultation of Rohiṇī by planets. 5. Occultation of stars by the Moon. 6. Time of star-planet conjunction.

#### V. INNOVATIVE TRENDS

##### 21. Novel Innovations ... 274

1. True longitude computation on the sphere of the zodiac. 2. Computation of True Moon. 3. Simplified astronomical procedures.

#### IV. OCCULTATION

##### 16. Eclipses ... 196

1. Cause stated in the Ṛgveda. 2. Cause of the lunar eclipse. 3. Lunar eclipse: Principle of computation. 4. Lunar eclipse computation: Vāsiṣṭha and Pauliṣa. 5. —Saurasiddhānta. 6. —Āryabhaṭīya. 7. —Āryabhaṭa's Midnight system. 8. —Emendation by Brahmagupta. 9. —Bhāskara I. 10. —Lalla. 11. —Bhāskara II. 12. —Karaṇaratna. 13. —Śrīpati. 14. —Vākyakaraṇa. 15. —Grahalāghava. 16. Lunar eclipse diagram: Vāsiṣṭha Pauliṣa. 17. —Āryabhaṭa's Midnight system. 18. —Bhāskara I. 19. —Lalla. 20. —Sūryasiddhānta. 21. —Bhāskara II. 22. —Karaṇaratna. 23. Solar eclipse: Computation: Pauliṣa. 24. —Romakasiddhānta. 25. —Saurasiddhānta. 26. —Āryabhaṭa's Midnight system. 27. —Bhāskara I. 28. —Lalla. 29. —Mahāsiddhānta. 30. —Bhāskara II. 31. —Karaṇaratna. 32. —Śrīpati. 33. —Grahalāghava. 34. —Solar eclipse diagram: Romakasiddhānta. 35. —Saurasiddhānta. 36. Colour of eclipses. 37. Conditions for non-prediction of eclipses. 38. —Inscriptional references: Lunar eclipses. 38. Solar eclipses.

##### 17. Phases of the Moon ... 241

1. Periodical appearance of the Moon. 2. Moon's luminosity. 3. Conditions of Moon's visibility. 4. Preliminaries for computation. 5. Visibility corrections: Ākṣa, Āyana and the Third. 6. Rising and setting of the Moon. 7. Moon's shadow. 8. Computation of Moon's cusps. 9. Moon's cusps—diagram.

##### 18. Heliacal rising and setting of Planets and Stars ... 254

1. Heliacal rising and setting of planets. 2. Days of rising and setting. 3. Planetary elongation for rising and setting. 4. Visibility corrections. 5. Computation of rising and setting. 6. Jupiter's rising and setting. 7. Venus: Rising and setting. 8. Rising and setting of a star. 9. Canopus: Rising.

##### 19. Conjunction of Planets ... 264

1. Types of planetary conjunctions. 2. Conjunction: Principle of computation. 3. Computation of conjunction.

##### 20. Conjunction of Stars and Planets ... 271

1. Conjunction of stars and planets. 2. Principle of planet-star conjunction. 3. Occultation of stars by planets. 4. Occultation of Rohiṇī by planets. 5. Occultation of stars by the Moon. 6. Time of star-planet conjunction.

#### V. INNOVATIVE TRENDS

##### 21. Novel Innovations ... 274

1. True longitude computation on the sphere of the zodiac. 2. Computation of True Moon. 3. Simplified astronomical procedures.

#### IV. OCCULTATION

##### 16. Eclipses ... 196

1. Cause stated in the Ṛgveda. 2. Cause of the lunar eclipse. 3. Lunar eclipse: Principle of computation. 4. Lunar eclipse computation: Vāsiṣṭha and Pauliṣa. 5. —Saurasiddhānta. 6. —Āryabhaṭīya. 7. —Āryabhaṭa's Midnight system. 8. —Emendation by Brahmagupta. 9. —Bhāskara I. 10. —Lalla. 11. —Bhāskara II. 12. —Karaṇaratna. 13. —Śrīpati. 14. —Vākyakaraṇa. 15. —Grahalāghava. 16. Lunar eclipse diagram: Vāsiṣṭha Pauliṣa. 17. —Āryabhaṭa's Midnight system. 18. —Bhāskara I. 19. —Lalla. 20. —Sūryasiddhānta. 21. —Bhāskara II. 22. —Karaṇaratna. 23. Solar eclipse: Computation: Pauliṣa. 24. —Romakasiddhānta. 25. —Saurasiddhānta. 26. —Āryabhaṭa's Midnight system. 27. —Bhāskara I. 28. —Lalla. 29. —Mahāsiddhānta. 30. —Bhāskara II. 31. —Karaṇaratna. 32. —Śrīpati. 33. —Grahalāghava. 34. —Solar eclipse diagram: Romakasiddhānta. 35. —Saurasiddhānta. 36. Colour of eclipses. 37. Conditions for non-prediction of eclipses. 38. —Inscriptional references: Lunar eclipses. 38. Solar eclipses.

##### 17. Phases of the Moon ... 241

1. Periodical appearance of the Moon. 2. Moon's luminosity. 3. Conditions of Moon's visibility. 4. Preliminaries for computation. 5. Visibility corrections: Ākṣa, Āyana and the Third. 6. Rising and setting of the Moon. 7. Moon's shadow. 8. Computation of Moon's cusps. 9. Moon's cusps—diagram.

##### 18. Heliacal rising and setting of Planets and Stars ... 254

1. Heliacal rising and setting of planets. 2. Days of rising and setting. 3. Planetary elongation for rising and setting. 4. Visibility corrections. 5. Computation of rising and setting. 6. Jupiter's rising and setting. 7. Venus: Rising and setting. 8. Rising and setting of a star. 9. Canopus: Rising.

##### 19. Conjunction of Planets ... 264

1. Types of planetary conjunctions. 2. Conjunction: Principle of computation. 3. Computation of conjunction.

##### 20. Conjunction of Stars and Planets ... 271

1. Conjunction of stars and planets. 2. Principle of planet-star conjunction. 3. Occultation of stars by planets. 4. Occultation of Rohiṇī by planets. 5. Occultation of stars by the Moon. 6. Time of star-planet conjunction.

#### V. INNOVATIVE TRENDS

##### 21. Novel Innovations ... 274

1. True longitude computation on the sphere of the zodiac. 2. Computation of True Moon. 3. Simplified astronomical procedures.

#### IV. OCCULTATION

##### 16. Eclipses ... 196

1. Cause stated in the Ṛgveda. 2. Cause of the lunar eclipse. 3. Lunar eclipse: Principle of computation. 4. Lunar eclipse computation: Vāsiṣṭha and Pauliṣa. 5. —Saurasiddhānta. 6. —Āryabhaṭīya. 7. —Āryabhaṭa's Midnight system. 8. —Emendation by Brahmagupta. 9. —Bhāskara I. 10. —Lalla. 11. —Bhāskara II. 12. —Karaṇaratna. 13. —Śrīpati. 14. —Vākyakaraṇa. 15. —Grahalāghava. 16. Lunar eclipse diagram: Vāsiṣṭha Pauliṣa. 17. —Āryabhaṭa's Midnight system. 18. —Bhāskara I. 19. —Lalla. 20. —Sūryasiddhānta. 21. —Bhāskara II. 22. —Karaṇaratna. 23. Solar eclipse: Computation: Pauliṣa. 24. —Romakasiddhānta. 25. —Saurasiddhānta. 26. —Āryabhaṭa's Midnight system. 27. —Bhāskara I. 28. —Lalla. 29. —Mahāsiddhānta. 30. —Bhāskara II. 31. —Karaṇaratna. 32. —Śrīpati. 33. —Grahalāghava. 34. —Solar eclipse diagram: Romakasiddhānta. 35. —Saurasiddhānta. 36. Colour of eclipses. 37. Conditions for non-prediction of eclipses. 38. —Inscriptional references: Lunar eclipses. 38. Solar eclipses.

##### 17. Phases of the Moon ... 241

1. Periodical appearance of the Moon. 2. Moon's luminosity. 3. Conditions of Moon's visibility. 4. Preliminaries for computation. 5. Visibility corrections: Ākṣa, Āyana and the Third. 6. Rising and setting of the Moon. 7. Moon's shadow. 8. Computation of Moon's cusps. 9. Moon's cusps—diagram.

##### 18. Heliacal rising and setting of Planets and Stars ... 254

1. Heliacal rising and setting of planets. 2. Days of rising and setting. 3. Planetary elongation for rising and setting. 4. Visibility corrections. 5. Computation of rising and setting. 6. Jupiter's rising and setting. 7. Venus: Rising and setting. 8. Rising and setting of a star. 9. Canopus: Rising.

##### 19. Conjunction of Planets ... 264

1. Types of planetary conjunctions. 2. Conjunction: Principle of computation. 3. Computation of conjunction.

##### 20. Conjunction of Stars and Planets ... 271

1. Conjunction of stars and planets. 2. Principle of planet-star conjunction. 3. Occultation of stars by planets. 4. Occultation of Rohiṇī by planets. 5. Occultation of stars by the Moon. 6. Time of star-planet conjunction.

#### V. INNOVATIVE TRENDS

##### 21. Novel Innovations ... 274

1. True longitude computation on the sphere of the zodiac. 2. Computation of True Moon. 3. Simplified astronomical procedures.



#### IV. OCCULTATION

##### 16. Eclipses ... 196

1. Cause stated in the Ṛgveda. 2. Cause of the lunar eclipse. 3. Lunar eclipse: Principle of computation. 4. Lunar eclipse computation: Vāsiṣṭha and Pauliṣa. 5. —Saurasiddhānta. 6. —Āryabhaṭīya. 7. —Āryabhaṭa's Midnight system. 8. —Emendation by Brahmagupta. 9. —Bhāskara I. 10. —Lalla. 11. —Bhāskara II. 12. —Karaṇaratna. 13. —Śrīpati. 14. —Vākyakaraṇa. 15. —Grahalāghava. 16. Lunar eclipse diagram: Vāsiṣṭha Pauliṣa. 17. —Āryabhaṭa's Midnight system. 18. —Bhāskara I. 19. —Lalla. 20. —Sūryasiddhānta. 21. —Bhāskara II. 22. —Karaṇaratna. 23. Solar eclipse: Computation: Pauliṣa. 24. —Romakasiddhānta. 25. —Saurasiddhānta. 26. —Āryabhaṭa's Midnight system. 27. —Bhāskara I. 28. —Lalla. 29. —Mahāsiddhānta. 30. —Bhāskara II. 31. —Karaṇaratna. 32. —Śrīpati. 33. —Grahalāghava. 34. —Solar eclipse diagram: Romakasiddhānta. 35. —Saurasiddhānta. 36. Colour of eclipses. 37. Conditions for non-prediction of eclipses. 38. —Inscriptional references: Lunar eclipses. 38. Solar eclipses.

##### 17. Phases of the Moon ... 241

1. Periodical appearance of the Moon. 2. Moon's luminosity. 3. Conditions of Moon's visibility. 4. Preliminaries for computation. 5. Visibility corrections: Ākṣa, Āyana and the Third. 6. Rising and setting of the Moon. 7. Moon's shadow. 8. Computation of Moon's cusps. 9. Moon's cusps—diagram.

##### 18. Heliacal rising and setting of Planets and Stars ... 254

1. Heliacal rising and setting of planets. 2. Days of rising and setting. 3. Planetary elongation for rising and setting. 4. Visibility corrections. 5. Computation of rising and setting. 6. Jupiter's rising and setting. 7. Venus: Rising and setting. 8. Rising and setting of a star. 9. Canopus: Rising.

##### 19. Conjunction of Planets ... 264

1. Types of planetary conjunctions. 2. Conjunction: Principle of computation. 3. Computation of conjunction.

##### 20. Conjunction of Stars and Planets ... 271

1. Conjunction of stars and planets. 2. Principle of planet-star conjunction. 3. Occultation of stars by planets. 4. Occultation of Rohiṇī by planets. 5. Occultation of stars by the Moon. 6. Time of star-planet conjunction.

#### V. INNOVATIVE TRENDS

##### 21. Novel Innovations ... 274

1. True longitude computation on the sphere of the zodiac. 2. Computation of True Moon. 3. Simplified astronomical procedures.

#### IV. OCCULTATION

##### 16. Eclipses ... 196

1. Cause stated in the Ṛgveda. 2. Cause of the lunar eclipse. 3. Lunar eclipse: Principle of computation. 4. Lunar eclipse computation: Vāsiṣṭha and Pauliṣa. 5. —Saurasiddhānta. 6. —Āryabhaṭīya. 7. —Āryabhaṭa's Midnight system. 8. —Emendation by Brahmagupta. 9. —Bhāskara I. 10. —Lalla. 11. —Bhāskara II. 12. —Karaṇaratna. 13. —Śrīpati. 14. —Vākyakaraṇa. 15. —Grahalāghava. 16. Lunar eclipse diagram: Vāsiṣṭha Pauliṣa. 17. —Āryabhaṭa's Midnight system. 18. —Bhāskara I. 19. —Lalla. 20. —Sūryasiddhānta. 21. —Bhāskara II. 22. —Karaṇaratna. 23. Solar eclipse: Computation: Pauliṣa. 24. —Romakasiddhānta. 25. —Saurasiddhānta. 26. —Āryabhaṭa's Midnight system. 27. —Bhāskara I. 28. —Lalla. 29. —Mahāsiddhānta. 30. —Bhāskara II. 31. —Karaṇaratna. 32. —Śrīpati. 33. —Grahalāghava. 34. —Solar eclipse diagram: Romakasiddhānta. 35. —Saurasiddhānta. 36. Colour of eclipses. 37. Conditions for non-prediction of eclipses. 38. —Inscriptional references: Lunar eclipses. 38. Solar eclipses.

##### 17. Phases of the Moon ... 241

1. Periodical appearance of the Moon. 2. Moon's luminosity. 3. Conditions of Moon's visibility. 4. Preliminaries for computation. 5. Visibility corrections: Ākṣa, Āyana and the Third. 6. Rising and setting of the Moon. 7. Moon's shadow. 8. Computation of Moon's cusps. 9. Moon's cusps—diagram.

##### 18. Heliacal rising and setting of Planets and Stars ... 254

1. Heliacal rising and setting of planets. 2. Days of rising and setting. 3. Planetary elongation for rising and setting. 4. Visibility corrections. 5. Computation of rising and setting. 6. Jupiter's rising and setting. 7. Venus: Rising and setting. 8. Rising and setting of a star. 9. Canopus: Rising.

##### 19. Conjunction of Planets ... 264

1. Types of planetary conjunctions. 2. Conjunction: Principle of computation. 3. Computation of conjunction.

##### 20. Conjunction of Stars and Planets ... 271

1. Conjunction of stars and planets. 2. Principle of planet-star conjunction. 3. Occultation of stars by planets. 4. Occultation of Rohiṇī by planets. 5. Occultation of stars by the Moon. 6. Time of star-planet conjunction.

#### V. INNOVATIVE TRENDS

##### 21. Novel Innovations ... 274

1. True longitude computation on the sphere of the zodiac. 2. Computation of True Moon. 3. Simplified astronomical procedures.

#### IV. OCCULTATION

##### 16. Eclipses ... 196

1. Cause stated in the Ṛgveda. 2. Cause of the lunar eclipse. 3. Lunar eclipse: Principle of computation. 4. Lunar eclipse computation: Vāsiṣṭha and Pauliṣa. 5. —Saurasiddhānta. 6. —Āryabhaṭīya. 7. —Āryabhaṭa's Midnight system. 8. —Emendation by Brahmagupta. 9. —Bhāskara I. 10. —Lalla. 11. —Bhāskara II. 12. —Karaṇaratna. 13. —Śrīpati. 14. —Vākyakaraṇa. 15. —Grahalāghava. 16. Lunar eclipse diagram: Vāsiṣṭha Pauliṣa. 17. —Āryabhaṭa's Midnight system. 18. —Bhāskara I. 19. —Lalla. 20. —Sūryasiddhānta. 21. —Bhāskara II. 22. —Karaṇaratna. 23. Solar eclipse: Computation: Pauliṣa. 24. —Romakasiddhānta. 25. —Saurasiddhānta. 26. —Āryabhaṭa's Midnight system. 27. —Bhāskara I. 28. —Lalla. 29. —Mahāsiddhānta. 30. —Bhāskara II. 31. —Karaṇaratna. 32. —Śrīpati. 33. —Grahalāghava. 34. —Solar eclipse diagram: Romakasiddhānta. 35. —Saurasiddhānta. 36. Colour of eclipses. 37. Conditions for non-prediction of eclipses. 38. —Inscriptional references: Lunar eclipses. 38. Solar eclipses.

##### 17. Phases of the Moon ... 241

1. Periodical appearance of the Moon. 2. Moon's luminosity. 3. Conditions of Moon's visibility. 4. Preliminaries for computation. 5. Visibility corrections: Ākṣa, Āyana and the Third. 6. Rising and setting of the Moon. 7. Moon's shadow. 8. Computation of Moon's cusps. 9. Moon's cusps—diagram.

##### 18. Heliacal rising and setting of Planets and Stars ... 254

1. Heliacal rising and setting of planets. 2. Days of rising and setting. 3. Planetary elongation for rising and setting. 4. Visibility corrections. 5. Computation of rising and setting. 6. Jupiter's rising and setting. 7. Venus: Rising and setting. 8. Rising and setting of a star. 9. Canopus: Rising.

##### 19. Conjunction of Planets ... 264

1. Types of planetary conjunctions. 2. Conjunction: Principle of computation. 3. Computation of conjunction.

##### 20. Conjunction of Stars and Planets ... 271

1. Conjunction of stars and planets. 2. Principle of planet-star conjunction. 3. Occultation of stars by planets. 4. Occultation of Rohiṇī by planets. 5. Occultation of stars by the Moon. 6. Time of star-planet conjunction.

#### V. INNOVATIVE TRENDS

##### 21. Novel Innovations ... 274

1. True longitude computation on the sphere of the zodiac. 2. Computation of True Moon. 3. Simplified astronomical procedures.

#### IV. OCCULTATION

##### 16. Eclipses ... 196

1. Cause stated in the Ṛgveda. 2. Cause of the lunar eclipse. 3. Lunar eclipse: Principle of computation. 4. Lunar eclipse computation: Vāsiṣṭha and Pauliṣa. 5. —Saurasiddhānta. 6. —Āryabhaṭīya. 7. —Āryabhaṭa's Midnight system. 8. —Emendation by Brahmagupta. 9. —Bhāskara I. 10. —Lalla. 11. —Bhāskara II. 12. —Karaṇaratna. 13. —Śrīpati. 14. —Vākyakaraṇa. 15. —Grahalāghava. 16. Lunar eclipse diagram: Vāsiṣṭha Pauliṣa. 17. —Āryabhaṭa's Midnight system. 18. —Bhāskara I. 19. —Lalla. 20. —Sūryasiddhānta. 21. —Bhāskara II. 22. —Karaṇaratna. 23. Solar eclipse: Computation: Pauliṣa. 24. —Romakasiddhānta. 25. —Saurasiddhānta. 26. —Āryabhaṭa's Midnight system. 27. —Bhāskara I. 28. —Lalla. 29. —Mahāsiddhānta. 30. —Bhāskara II. 31. —Karaṇaratna. 32. —Śrīpati. 33. —Grahalāghava. 34. —Solar eclipse diagram: Romakasiddhānta. 35. —Saurasiddhānta. 36. Colour of eclipses. 37. Conditions for non-prediction of eclipses. 38. —Inscriptional references: Lunar eclipses. 38. Solar eclipses.

##### 17. Phases of the Moon ... 241

1. Periodical appearance of the Moon. 2. Moon's luminosity. 3. Conditions of Moon's visibility. 4. Preliminaries for computation. 5. Visibility corrections: Ākṣa, Āyana and the Third. 6. Rising and setting of the Moon. 7. Moon's shadow. 8. Computation of Moon's cusps. 9. Moon's cusps—diagram.

##### 18. Heliacal rising and setting of Planets and Stars ... 254

1. Heliacal rising and setting of planets. 2. Days of rising and setting. 3. Planetary elongation for rising and setting. 4. Visibility corrections. 5. Computation of rising and setting. 6. Jupiter's rising and setting. 7. Venus: Rising and setting. 8. Rising and setting of a star. 9. Canopus: Rising.

##### 19. Conjunction of Planets ... 264

1. Types of planetary conjunctions. 2. Conjunction: Principle of computation. 3. Computation of conjunction.

##### 20. Conjunction of Stars and Planets ... 271

1. Conjunction of stars and planets. 2. Principle of planet-star conjunction. 3. Occultation of stars by planets. 4. Occultation of Rohiṇī by planets. 5. Occultation of stars by the Moon. 6. Time of star-planet conjunction.

#### V. INNOVATIVE TRENDS

##### 21. Novel Innovations ... 274

1. True longitude computation on the sphere of the zodiac. 2. Computation of True Moon. 3. Simplified astronomical procedures.

#### IV. OCCULTATION

##### 16. Eclipses ... 196

1. Cause stated in the Ṛgveda. 2. Cause of the lunar eclipse. 3. Lunar eclipse: Principle of computation. 4. Lunar eclipse computation: Vāsiṣṭha and Pauliṣa. 5. —Saurasiddhānta. 6. —Āryabhaṭīya. 7. —Āryabhaṭa's Midnight system. 8. —Emendation by Brahmagupta. 9. —Bhāskara I. 10. —Lalla. 11. —Bhāskara II. 12. —Karaṇaratna. 13. —Śrīpati. 14. —Vākyakaraṇa. 15. —Grahalāghava. 16. Lunar eclipse diagram: Vāsiṣṭha Pauliṣa. 17. —Āryabhaṭa's Midnight system. 18. —Bhāskara I. 19. —Lalla. 20. —Sūryasiddhānta. 21. —Bhāskara II. 22. —Karaṇaratna. 23. Solar eclipse: Computation: Pauliṣa. 24. —Romakasiddhānta. 25. —Saurasiddhānta. 26. —Āryabhaṭa's Midnight system. 27. —Bhāskara I. 28. —Lalla. 29. —Mahāsiddhānta. 30. —Bhāskara II. 31. —Karaṇaratna. 32. —Śrīpati. 33. —Grahalāghava. 34. —Solar eclipse diagram: Romakasiddhānta. 35. —Saurasiddhānta. 36. Colour of eclipses. 37. Conditions for non-prediction of eclipses. 38. —Inscriptional references: Lunar eclipses. 38. Solar eclipses.

##### 17. Phases of the Moon ... 241

1. Periodical appearance of the Moon. 2. Moon's luminosity. 3. Conditions of Moon's visibility. 4. Preliminaries for computation. 5. Visibility corrections: Ākṣa, Āyana and the Third. 6. Rising and setting of the Moon. 7. Moon's shadow. 8. Computation of Moon's cusps. 9. Moon's cusps—diagram.

##### 18. Heliacal rising and setting of Planets and Stars ... 254

1. Heliacal rising and setting of planets. 2. Days of rising and setting. 3. Planetary elongation for rising and setting. 4. Visibility corrections. 5. Computation of rising and setting. 6. Jupiter's rising and setting. 7. Venus: Rising and setting. 8. Rising and setting of a star. 9. Canopus: Rising.

##### 19. Conjunction of Planets ... 264

1. Types of planetary conjunctions. 2. Conjunction: Principle of computation. 3. Computation of conjunction.

##### 20. Conjunction of Stars and Planets ... 271

1. Conjunction of stars and planets. 2. Principle of planet-star conjunction. 3. Occultation of stars by planets. 4. Occultation of Rohiṇī by planets. 5. Occultation of stars by the Moon. 6. Time of star-planet conjunction.

#### V. INNOVATIVE TRENDS

##### 21. Novel Innovations ... 274

1. True longitude computation on the sphere of the zodiac. 2. Computation of True Moon. 3. Simplified astronomical procedures.

#### IV. OCCULTATION

##### 16. Eclipses ... 196

1. Cause stated in the Ṛgveda. 2. Cause of the lunar eclipse. 3. Lunar eclipse: Principle of computation. 4. Lunar eclipse computation: Vāsiṣṭha and Pauliṣa. 5. —Saurasiddhānta. 6. —Āryabhaṭīya. 7. —Āryabhaṭa's Midnight system. 8. —Emendation by Brahmagupta. 9. —Bhāskara I. 10. —Lalla. 11. —Bhāskara II. 12. —Karaṇaratna. 13. —Śrīpati. 14. —Vākyakaraṇa. 15. —Grahalāghava. 16. Lunar eclipse diagram: Vāsiṣṭha Pauliṣa. 17. —Āryabhaṭa's Midnight system. 18. —Bhāskara I. 19. —Lalla. 20. —Sūryasiddhānta. 21. —Bhāskara II. 22. —Karaṇaratna. 23. Solar eclipse: Computation: Pauliṣa. 24. —Romakasiddhānta. 25. —Saurasiddhānta. 26. —Āryabhaṭa's Midnight system. 27. —Bhāskara I. 28. —Lalla. 29. —Mahāsiddhānta. 30. —Bhāskara II. 31. —Karaṇaratna. 32. —Śrīpati. 33. —Grahalāghava. 34. —Solar eclipse diagram: Romakasiddhānta. 35. —Saurasiddhānta. 36. Colour of eclipses. 37. Conditions for non-prediction of eclipses. 38. —Inscriptional references: Lunar eclipses. 38. Solar eclipses.

##### 17. Phases of the Moon ... 241

1. Periodical appearance of the Moon. 2. Moon's luminosity. 3. Conditions of Moon's visibility. 4. Preliminaries for computation. 5. Visibility corrections: Ākṣa, Āyana and the Third. 6. Rising and setting of the Moon. 7. Moon's shadow. 8. Computation of Moon's cusps. 9. Moon's cusps—diagram.

##### 18. Heliacal rising and setting of Planets and Stars ... 254

1. Heliacal rising and setting of planets. 2. Days of rising and setting. 3. Planetary elongation for rising and setting. 4. Visibility corrections. 5. Computation of rising and setting. 6. Jupiter's rising and setting. 7. Venus: Rising and setting. 8. Rising and setting of a star. 9. Canopus: Rising.

##### 19. Conjunction of Planets ... 264

1. Types of planetary conjunctions. 2. Conjunction: Principle of computation. 3. Computation of conjunction.

##### 20. Conjunction of Stars and Planets ... 271

1. Conjunction of stars and planets. 2. Principle of planet-star conjunction. 3. Occultation of stars by planets. 4. Occultation of Rohiṇī by planets. 5. Occultation of stars by the Moon. 6. Time of star-planet conjunction.

#### V. INNOVATIVE TRENDS

##### 21. Novel Innovations ... 274

1. True longitude computation on the sphere of the zodiac. 2. Computation of True Moon. 3. Simplified astronomical procedures.

#### IV. OCCULTATION

##### 16. Eclipses ... 196

1. Cause stated in the Ṛgveda. 2. Cause of the lunar eclipse. 3. Lunar eclipse: Principle of computation. 4. Lunar eclipse computation: Vāsiṣṭha and Pauliṣa. 5. —Saurasiddhānta. 6. —Āryabhaṭīya. 7. —Āryabhaṭa's Midnight system. 8. —Emendation by Brahmagupta. 9. —Bhāskara I. 10. —Lalla. 11. —Bhāskara II. 12. —Karaṇaratna. 13. —Śrīpati. 14. —Vākyakaraṇa. 15. —Grahalāghava. 16. Lunar eclipse diagram: Vāsiṣṭha Pauliṣa. 17. —Āryabhaṭa's Midnight system. 18. —Bhāskara I. 19. —Lalla. 20. —Sūryasiddhānta. 21. —Bhāskara II. 22. —Karaṇaratna. 23. Solar eclipse: Computation: Pauliṣa. 24. —Romakasiddhānta. 25. —Saurasiddhānta. 26. —Āryabhaṭa's Midnight system. 27. —Bhāskara I. 28. —Lalla. 29. —Mahāsiddhānta. 30. —Bhāskara II. 31. —Karaṇaratna. 32. —Śrīpati. 33. —Grahalāghava. 34. —Solar eclipse diagram: Romakasiddhānta. 35. —Saurasiddhānta. 36. Colour of eclipses. 37. Conditions for non-prediction of eclipses. 38. —Inscriptional references: Lunar eclipses. 38. Solar eclipses.

##### 17. Phases of the Moon ... 241

1. Periodical appearance of the Moon. 2. Moon's luminosity. 3. Conditions of Moon's visibility. 4. Preliminaries for computation. 5. Visibility corrections: Ākṣa, Āyana and the Third. 6. Rising and setting of the Moon. 7. Moon's shadow. 8. Computation of Moon's cusps. 9. Moon's cusps—diagram.

##### 18. Heliacal rising and setting of Planets and Stars ... 254

1. Heliacal rising and setting of planets. 2. Days of rising and setting. 3. Planetary elongation for rising and setting. 4. Visibility corrections. 5. Computation of rising and setting. 6. Jupiter's rising and setting. 7. Venus: Rising and setting. 8. Rising and setting of a star. 9. Canopus: Rising.

##### 19. Conjunction of Planets ... 264

1. Types of planetary conjunctions. 2. Conjunction: Principle of computation. 3. Computation of conjunction.

##### 20. Conjunction of Stars and Planets ... 271

1. Conjunction of stars and planets. 2. Principle of planet-star conjunction. 3. Occultation of stars by planets. 4. Occultation of Rohiṇī by planets. 5. Occultation of stars by the Moon. 6. Time of star-planet conjunction.

#### V. INNOVATIVE TRENDS

##### 21. Novel Innovations ... 274

1. True longitude computation on the sphere of the zodiac. 2. Computation of True Moon. 3. Simplified astronomical procedures.

#### IV. OCCULTATION

##### 16. Eclipses ... 196

1. Cause stated in the Ṛgveda. 2. Cause of the lunar eclipse. 3. Lunar eclipse: Principle of computation. 4. Lunar eclipse computation: Vāsiṣṭha and Pauliṣa. 5. —Saurasiddhānta. 6. —Āryabhaṭīya. 7. —Āryabhaṭa's Midnight system. 8. —Emendation by Brahmagupta. 9. —Bhāskara I. 10. —Lalla. 11. —Bhāskara II. 12. —Karaṇaratna. 13. —Śrīpati. 14. —Vākyakaraṇa. 15. —Grahalāghava. 16. Lunar eclipse diagram: Vāsiṣṭha Pauliṣa. 17. —Āryabhaṭa's Midnight system. 18. —Bhāskara I. 19. —Lalla. 20. —Sūryasiddhānta. 21. —Bhāskara II. 22. —Karaṇaratna. 23. Solar eclipse: Computation: Pauliṣa. 24. —Romakasiddhānta. 25. —Saurasiddhānta. 26. —Āryabhaṭa's Midnight system. 27. —Bhāskara I. 28. —Lalla. 29. —Mahāsiddhānta. 30. —Bhāskara II. 31. —Karaṇaratna. 32. —Śrīpati. 33. —Grahalāghava. 34. —Solar eclipse diagram: Romakasiddhānta. 35. —Saurasiddhānta. 36. Colour of eclipses. 37. Conditions for non-prediction of eclipses. 38. —Inscriptional references: Lunar eclipses. 38. Solar eclipses.

##### 17. Phases of the Moon ... 241

1. Periodical appearance of the Moon. 2. Moon's luminosity. 3. Conditions of Moon's visibility. 4. Preliminaries for computation. 5. Visibility corrections: Ākṣa, Āyana and the Third. 6. Rising and setting of the Moon. 7. Moon's shadow. 8. Computation of Moon's cusps. 9. Moon's cusps—diagram.

##### 18. Heliacal rising and setting of Planets and Stars ... 254

1. Heliacal rising and setting of planets. 2. Days of rising and setting. 3. Planetary elongation for rising and setting. 4. Visibility corrections. 5. Computation of rising and setting. 6. Jupiter's rising and setting. 7. Venus: Rising and setting. 8. Rising and setting of a star. 9. Canopus: Rising.

##### 19. Conjunction of Planets ... 264

1. Types of planetary conjunctions. 2. Conjunction: Principle of computation. 3. Computation of conjunction.

##### 20. Conjunction of Stars and Planets ... 271

1. Conjunction of stars and planets. 2. Principle of planet-star conjunction. 3. Occultation of stars by planets. 4. Occultation of Rohiṇī by planets. 5. Occultation of stars by the Moon. 6. Time of star-planet conjunction.

#### V. INNOVATIVE TRENDS

##### 21. Novel Innovations ... 274

1. True longitude computation on the sphere of the zodiac. 2. Computation of True Moon. 3. Simplified astronomical procedures.



#### IV. OCCULTATION

##### 16. Eclipses ... 196

1. Cause stated in the Ṛgveda. 2. Cause of the lunar eclipse. 3. Lunar eclipse: Principle of computation. 4. Lunar eclipse computation: Vāsiṣṭha and Pauliṣa. 5. —Saurasiddhānta. 6. —Āryabhaṭīya. 7. —Āryabhaṭa's Midnight system. 8. —Emendation by Brahmagupta. 9. —Bhāskara I. 10. —Lalla. 11. —Bhāskara II. 12. —Karaṇaratna. 13. —Śrīpati. 14. —Vākyakaraṇa. 15. —Grahalāghava. 16. Lunar eclipse diagram: Vāsiṣṭha Pauliṣa. 17. —Āryabhaṭa's Midnight system. 18. —Bhāskara I. 19. —Lalla. 20. —Sūryasiddhānta. 21. —Bhāskara II. 22. —Karaṇaratna. 23. Solar eclipse: Computation: Pauliṣa. 24. —Romakasiddhānta. 25. —Saurasiddhānta. 26. —Āryabhaṭa's Midnight system. 27. —Bhāskara I. 28. —Lalla. 29. —Mahāsiddhānta. 30. —Bhāskara II. 31. —Karaṇaratna. 32. —Śrīpati. 33. —Grahalāghava. 34. —Solar eclipse diagram: Romakasiddhānta. 35. —Saurasiddhānta. 36. Colour of eclipses. 37. Conditions for non-prediction of eclipses. 38. —Inscriptional references: Lunar eclipses. 38. Solar eclipses.

##### 17. Phases of the Moon ... 241

1. Periodical appearance of the Moon. 2. Moon's luminosity. 3. Conditions of Moon's visibility. 4. Preliminaries for computation. 5. Visibility corrections: Ākṣa, Āyana and the Third. 6. Rising and setting of the Moon. 7. Moon's shadow. 8. Computation of Moon's cusps. 9. Moon's cusps—diagram.

##### 18. Heliacal rising and setting of Planets and Stars ... 254

1. Heliacal rising and setting of planets. 2. Days of rising and setting. 3. Planetary elongation for rising and setting. 4. Visibility corrections. 5. Computation of rising and setting. 6. Jupiter's rising and setting. 7. Venus: Rising and setting. 8. Rising and setting of a star. 9. Canopus: Rising.

##### 19. Conjunction of Planets ... 264

1. Types of planetary conjunctions. 2. Conjunction: Principle of computation. 3. Computation of conjunction.

##### 20. Conjunction of Stars and Planets ... 271

1. Conjunction of stars and planets. 2. Principle of planet-star conjunction. 3. Occultation of stars by planets. 4. Occultation of Rohiṇī by planets. 5. Occultation of stars by the Moon. 6. Time of star-planet conjunction.

#### V. INNOVATIVE TRENDS

##### 21. Novel Innovations ... 274

1. True longitude computation on the sphere of the zodiac. 2. Computation of True Moon. 3. Simplified astronomical procedures.

#### IV. OCCULTATION

##### 16. Eclipses ... 196

1. Cause stated in the Ṛgveda. 2. Cause of the lunar eclipse. 3. Lunar eclipse: Principle of computation. 4. Lunar eclipse computation: Vāsiṣṭha and Pauliṣa. 5. —Saurasiddhānta. 6. —Āryabhaṭīya. 7. —Āryabhaṭa's Midnight system. 8. —Emendation by Brahmagupta. 9. —Bhāskara I. 10. —Lalla. 11. —Bhāskara II. 12. —Karaṇaratna. 13. —Śrīpati. 14. —Vākyakaraṇa. 15. —Grahalāghava. 16. Lunar eclipse diagram: Vāsiṣṭha Pauliṣa. 17. —Āryabhaṭa's Midnight system. 18. —Bhāskara I. 19. —Lalla. 20. —Sūryasiddhānta. 21. —Bhāskara II. 22. —Karaṇaratna. 23. Solar eclipse: Computation: Pauliṣa. 24. —Romakasiddhānta. 25. —Saurasiddhānta. 26. —Āryabhaṭa's Midnight system. 27. —Bhāskara I. 28. —Lalla. 29. —Mahāsiddhānta. 30. —Bhāskara II. 31. —Karaṇaratna. 32. —Śrīpati. 33. —Grahalāghava. 34. —Solar eclipse diagram: Romakasiddhānta. 35. —Saurasiddhānta. 36. Colour of eclipses. 37. Conditions for non-prediction of eclipses. 38. —Inscriptional references: Lunar eclipses. 38. Solar eclipses.

##### 17. Phases of the Moon ... 241

1. Periodical appearance of the Moon. 2. Moon's luminosity. 3. Conditions of Moon's visibility. 4. Preliminaries for computation. 5. Visibility corrections: Ākṣa, Āyana and the Third. 6. Rising and setting of the Moon. 7. Moon's shadow. 8. Computation of Moon's cusps. 9. Moon's cusps—diagram.

##### 18. Heliacal rising and setting of Planets and Stars ... 254

1. Heliacal rising and setting of planets. 2. Days of rising and setting. 3. Planetary elongation for rising and setting. 4. Visibility corrections. 5. Computation of rising and setting. 6. Jupiter's rising and setting. 7. Venus: Rising and setting. 8. Rising and setting of a star. 9. Canopus: Rising.

##### 19. Conjunction of Planets ... 264

1. Types of planetary conjunctions. 2. Conjunction: Principle of computation. 3. Computation of conjunction.

##### 20. Conjunction of Stars and Planets ... 271

1. Conjunction of stars and planets. 2. Principle of planet-star conjunction. 3. Occultation of stars by planets. 4. Occultation of Rohiṇī by planets. 5. Occultation of stars by the Moon. 6. Time of star-planet conjunction.

#### V. INNOVATIVE TRENDS

##### 21. Novel Innovations ... 274

1. True longitude computation on the sphere of the zodiac. 2. Computation of True Moon. 3. Simplified astronomical procedures.

#### IV. OCCULTATION

##### 16. Eclipses ... 196

1. Cause stated in the Ṛgveda. 2. Cause of the lunar eclipse. 3. Lunar eclipse: Principle of computation. 4. Lunar eclipse computation: Vāsiṣṭha and Pauliṣa. 5. —Saurasiddhānta. 6. —Āryabhaṭīya. 7. —Āryabhaṭa's Midnight system. 8. —Emendation by Brahmagupta. 9. —Bhāskara I. 10. —Lalla. 11. —Bhāskara II. 12. —Karaṇaratna. 13. —Śrīpati. 14. —Vākyakaraṇa. 15. —Grahalāghava. 16. Lunar eclipse diagram: Vāsiṣṭha Pauliṣa. 17. —Āryabhaṭa's Midnight system. 18. —Bhāskara I. 19. —Lalla. 20. —Sūryasiddhānta. 21. —Bhāskara II. 22. —Karaṇaratna. 23. Solar eclipse: Computation: Pauliṣa. 24. —Romakasiddhānta. 25. —Saurasiddhānta. 26. —Āryabhaṭa's Midnight system. 27. —Bhāskara I. 28. —Lalla. 29. —Mahāsiddhānta. 30. —Bhāskara II. 31. —Karaṇaratna. 32. —Śrīpati. 33. —Grahalāghava. 34. —Solar eclipse diagram: Romakasiddhānta. 35. —Saurasiddhānta. 36. Colour of eclipses. 37. Conditions for non-prediction of eclipses. 38. —Inscriptional references: Lunar eclipses. 38. Solar eclipses.

##### 17. Phases of the Moon ... 241

1. Periodical appearance of the Moon. 2. Moon's luminosity. 3. Conditions of Moon's visibility. 4. Preliminaries for computation. 5. Visibility corrections: Ākṣa, Āyana and the Third. 6. Rising and setting of the Moon. 7. Moon's shadow. 8. Computation of Moon's cusps. 9. Moon's cusps—diagram.

##### 18. Heliacal rising and setting of Planets and Stars ... 254

1. Heliacal rising and setting of planets. 2. Days of rising and setting. 3. Planetary elongation for rising and setting. 4. Visibility corrections. 5. Computation of rising and setting. 6. Jupiter's rising and setting. 7. Venus: Rising and setting. 8. Rising and setting of a star. 9. Canopus: Rising.

##### 19. Conjunction of Planets ... 264

1. Types of planetary conjunctions. 2. Conjunction: Principle of computation. 3. Computation of conjunction.

##### 20. Conjunction of Stars and Planets ... 271

1. Conjunction of stars and planets. 2. Principle of planet-star conjunction. 3. Occultation of stars by planets. 4. Occultation of Rohiṇī by planets. 5. Occultation of stars by the Moon. 6. Time of star-planet conjunction.

#### V. INNOVATIVE TRENDS

##### 21. Novel Innovations ... 274

1. True longitude computation on the sphere of the zodiac. 2. Computation of True Moon. 3. Simplified astronomical procedures.

#### IV. OCCULTATION

##### 16. Eclipses ... 196

1. Cause stated in the Ṛgveda. 2. Cause of the lunar eclipse. 3. Lunar eclipse: Principle of computation. 4. Lunar eclipse computation: Vāsiṣṭha and Pauliṣa. 5. —Saurasiddhānta. 6. —Āryabhaṭīya. 7. —Āryabhaṭa's Midnight system. 8. —Emendation by Brahmagupta. 9. —Bhāskara I. 10. —Lalla. 11. —Bhāskara II. 12. —Karaṇaratna. 13. —Śrīpati. 14. —Vākyakaraṇa. 15. —Grahalāghava. 16. Lunar eclipse diagram: Vāsiṣṭha Pauliṣa. 17. —Āryabhaṭa's Midnight system. 18. —Bhāskara I. 19. —Lalla. 20. —Sūryasiddhānta. 21. —Bhāskara II. 22. —Karaṇaratna. 23. Solar eclipse: Computation: Pauliṣa. 24. —Romakasiddhānta. 25. —Saurasiddhānta. 26. —Āryabhaṭa's Midnight system. 27. —Bhāskara I. 28. —Lalla. 29. —Mahāsiddhānta. 30. —Bhāskara II. 31. —Karaṇaratna. 32. —Śrīpati. 33. —Grahalāghava. 34. —Solar eclipse diagram: Romakasiddhānta. 35. —Saurasiddhānta. 36. Colour of eclipses. 37. Conditions for non-prediction of eclipses. 38. —Inscriptional references: Lunar eclipses. 38. Solar eclipses.

##### 17. Phases of the Moon ... 241

1. Periodical appearance of the Moon. 2. Moon's luminosity. 3. Conditions of Moon's visibility. 4. Preliminaries for computation. 5. Visibility corrections: Ākṣa, Āyana and the Third. 6. Rising and setting of the Moon. 7. Moon's shadow. 8. Computation of Moon's cusps. 9. Moon's cusps—diagram.

##### 18. Heliacal rising and setting of Planets and Stars ... 254

1. Heliacal rising and setting of planets. 2. Days of rising and setting. 3. Planetary elongation for rising and setting. 4. Visibility corrections. 5. Computation of rising and setting. 6. Jupiter's rising and setting. 7. Venus: Rising and setting. 8. Rising and setting of a star. 9. Canopus: Rising.

##### 19. Conjunction of Planets ... 264

1. Types of planetary conjunctions. 2. Conjunction: Principle of computation. 3. Computation of conjunction.

##### 20. Conjunction of Stars and Planets ... 271

1. Conjunction of stars and planets. 2. Principle of planet-star conjunction. 3. Occultation of stars by planets. 4. Occultation of Rohiṇī by planets. 5. Occultation of stars by the Moon. 6. Time of star-planet conjunction.

#### V. INNOVATIVE TRENDS

##### 21. Novel Innovations ... 274

1. True longitude computation on the sphere of the zodiac. 2. Computation of True Moon. 3. Simplified astronomical procedures.

#### IV. OCCULTATION

##### 16. Eclipses ... 196

1. Cause stated in the Ṛgveda. 2. Cause of the lunar eclipse. 3. Lunar eclipse: Principle of computation. 4. Lunar eclipse computation: Vāsiṣṭha and Pauliṣa. 5. —Saurasiddhānta. 6. —Āryabhaṭīya. 7. —Āryabhaṭa's Midnight system. 8. —Emendation by Brahmagupta. 9. —Bhāskara I. 10. —Lalla. 11. —Bhāskara II. 12. —Karaṇaratna. 13. —Śrīpati. 14. —Vākyakaraṇa. 15. —Grahalāghava. 16. Lunar eclipse diagram: Vāsiṣṭha Pauliṣa. 17. —Āryabhaṭa's Midnight system. 18. —Bhāskara I. 19. —Lalla. 20. —Sūryasiddhānta. 21. —Bhāskara II. 22. —Karaṇaratna. 23. Solar eclipse: Computation: Pauliṣa. 24. —Romakasiddhānta. 25. —Saurasiddhānta. 26. —Āryabhaṭa's Midnight system. 27. —Bhāskara I. 28. —Lalla. 29. —Mahāsiddhānta. 30. —Bhāskara II. 31. —Karaṇaratna. 32. —Śrīpati. 33. —Grahalāghava. 34. —Solar eclipse diagram: Romakasiddhānta. 35. —Saurasiddhānta. 36. Colour of eclipses. 37. Conditions for non-prediction of eclipses. 38. —Inscriptional references: Lunar eclipses. 38. Solar eclipses.

##### 17. Phases of the Moon ... 241

1. Periodical appearance of the Moon. 2. Moon's luminosity. 3. Conditions of Moon's visibility. 4. Preliminaries for computation. 5. Visibility corrections: Ākṣa, Āyana and the Third. 6. Rising and setting of the Moon. 7. Moon's shadow. 8. Computation of Moon's cusps. 9. Moon's cusps—diagram.

##### 18. Heliacal rising and setting of Planets and Stars ... 254

1. Heliacal rising and setting of planets. 2. Days of rising and setting. 3. Planetary elongation for rising and setting. 4. Visibility corrections. 5. Computation of rising and setting. 6. Jupiter's rising and setting. 7. Venus: Rising and setting. 8. Rising and setting of a star. 9. Canopus: Rising.

##### 19. Conjunction of Planets ... 264

1. Types of planetary conjunctions. 2. Conjunction: Principle of computation. 3. Computation of conjunction.

##### 20. Conjunction of Stars and Planets ... 271

1. Conjunction of stars and planets. 2. Principle of planet-star conjunction. 3. Occultation of stars by planets. 4. Occultation of Rohiṇī by planets. 5. Occultation of stars by the Moon. 6. Time of star-planet conjunction.

#### V. INNOVATIVE TRENDS

##### 21. Novel Innovations ... 274

1. True longitude computation on the sphere of the zodiac. 2. Computation of True Moon. 3. Simplified astronomical procedures.

#### IV. OCCULTATION

##### 16. Eclipses ... 196

1. Cause stated in the Ṛgveda. 2. Cause of the lunar eclipse. 3. Lunar eclipse: Principle of computation. 4. Lunar eclipse computation: Vāsiṣṭha and Pauliṣa. 5. —Saurasiddhānta. 6. —Āryabhaṭīya. 7. —Āryabhaṭa's Midnight system. 8. —Emendation by Brahmagupta. 9. —Bhāskara I. 10. —Lalla. 11. —Bhāskara II. 12. —Karaṇaratna. 13. —Śrīpati. 14. —Vākyakaraṇa. 15. —Grahalāghava. 16. Lunar eclipse diagram: Vāsiṣṭha Pauliṣa. 17. —Āryabhaṭa's Midnight system. 18. —Bhāskara I. 19. —Lalla. 20. —Sūryasiddhānta. 21. —Bhāskara II. 22. —Karaṇaratna. 23. Solar eclipse: Computation: Pauliṣa. 24. —Romakasiddhānta. 25. —Saurasiddhānta. 26. —Āryabhaṭa's Midnight system. 27. —Bhāskara I. 28. —Lalla. 29. —Mahāsiddhānta. 30. —Bhāskara II. 31. —Karaṇaratna. 32. —Śrīpati. 33. —Grahalāghava. 34. —Solar eclipse diagram: Romakasiddhānta. 35. —Saurasiddhānta. 36. Colour of eclipses. 37. Conditions for non-prediction of eclipses. 38. —Inscriptional references: Lunar eclipses. 38. Solar eclipses.

##### 17. Phases of the Moon ... 241

1. Periodical appearance of the Moon. 2. Moon's luminosity. 3. Conditions of Moon's visibility. 4. Preliminaries for computation. 5. Visibility corrections: Ākṣa, Āyana and the Third. 6. Rising and setting of the Moon. 7. Moon's shadow. 8. Computation of Moon's cusps. 9. Moon's cusps—diagram.

##### 18. Heliacal rising and setting of Planets and Stars ... 254

1. Heliacal rising and setting of planets. 2. Days of rising and setting. 3. Planetary elongation for rising and setting. 4. Visibility corrections. 5. Computation of rising and setting. 6. Jupiter's rising and setting. 7. Venus: Rising and setting. 8. Rising and setting of a star. 9. Canopus: Rising.

##### 19. Conjunction of Planets ... 264

1. Types of planetary conjunctions. 2. Conjunction: Principle of computation. 3. Computation of conjunction.

##### 20. Conjunction of Stars and Planets ... 271

1. Conjunction of stars and planets. 2. Principle of planet-star conjunction. 3. Occultation of stars by planets. 4. Occultation of Rohiṇī by planets. 5. Occultation of stars by the Moon. 6. Time of star-planet conjunction.

#### V. INNOVATIVE TRENDS

##### 21. Novel Innovations ... 274

1. True longitude computation on the sphere of the zodiac. 2. Computation of True Moon. 3. Simplified astronomical procedures.

#### IV. OCCULTATION

##### 16. Eclipses ... 196

1. Cause stated in the Ṛgveda. 2. Cause of the lunar eclipse. 3. Lunar eclipse: Principle of computation. 4. Lunar eclipse computation: Vāsiṣṭha and Pauliṣa. 5. —Saurasiddhānta. 6. —Āryabhaṭīya. 7. —Āryabhaṭa's Midnight system. 8. —Emendation by Brahmagupta. 9. —Bhāskara I. 10. —Lalla. 11. —Bhāskara II. 12. —Karaṇaratna. 13. —Śrīpati. 14. —Vākyakaraṇa. 15. —Grahalāghava. 16. Lunar eclipse diagram: Vāsiṣṭha Pauliṣa. 17. —Āryabhaṭa's Midnight system. 18. —Bhāskara I. 19. —Lalla. 20. —Sūryasiddhānta. 21. —Bhāskara II. 22. —Karaṇaratna. 23. Solar eclipse: Computation: Pauliṣa. 24. —Romakasiddhānta. 25. —Saurasiddhānta. 26. —Āryabhaṭa's Midnight system. 27. —Bhāskara I. 28. —Lalla. 29. —Mahāsiddhānta. 30. —Bhāskara II. 31. —Karaṇaratna. 32. —Śrīpati. 33. —Grahalāghava. 34. —Solar eclipse diagram: Romakasiddhānta. 35. —Saurasiddhānta. 36. Colour of eclipses. 37. Conditions for non-prediction of eclipses. 38. —Inscriptional references: Lunar eclipses. 38. Solar eclipses.

##### 17. Phases of the Moon ... 241

1. Periodical appearance of the Moon. 2. Moon's luminosity. 3. Conditions of Moon's visibility. 4. Preliminaries for computation. 5. Visibility corrections: Ākṣa, Āyana and the Third. 6. Rising and setting of the Moon. 7. Moon's shadow. 8. Computation of Moon's cusps. 9. Moon's cusps—diagram.

##### 18. Heliacal rising and setting of Planets and Stars ... 254

1. Heliacal rising and setting of planets. 2. Days of rising and setting. 3. Planetary elongation for rising and setting. 4. Visibility corrections. 5. Computation of rising and setting. 6. Jupiter's rising and setting. 7. Venus: Rising and setting. 8. Rising and setting of a star. 9. Canopus: Rising.

##### 19. Conjunction of Planets ... 264

1. Types of planetary conjunctions. 2. Conjunction: Principle of computation. 3. Computation of conjunction.

##### 20. Conjunction of Stars and Planets ... 271

1. Conjunction of stars and planets. 2. Principle of planet-star conjunction. 3. Occultation of stars by planets. 4. Occultation of Rohiṇī by planets. 5. Occultation of stars by the Moon. 6. Time of star-planet conjunction.

#### V. INNOVATIVE TRENDS

##### 21. Novel Innovations ... 274

1. True longitude computation on the sphere of the zodiac. 2. Computation of True Moon. 3. Simplified astronomical procedures.

#### IV. OCCULTATION

##### 16. Eclipses ... 196

1. Cause stated in the Ṛgveda. 2. Cause of the lunar eclipse. 3. Lunar eclipse: Principle of computation. 4. Lunar eclipse computation: Vāsiṣṭha and Pauliṣa. 5. —Saurasiddhānta. 6. —Āryabhaṭīya. 7. —Āryabhaṭa's Midnight system. 8. —Emendation by Brahmagupta. 9. —Bhāskara I. 10. —Lalla. 11. —Bhāskara II. 12. —Karaṇaratna. 13. —Śrīpati. 14. —Vākyakaraṇa. 15. —Grahalāghava. 16. Lunar eclipse diagram: Vāsiṣṭha Pauliṣa. 17. —Āryabhaṭa's Midnight system. 18. —Bhāskara I. 19. —Lalla. 20. —Sūryasiddhānta. 21. —Bhāskara II. 22. —Karaṇaratna. 23. Solar eclipse: Computation: Pauliṣa. 24. —Romakasiddhānta. 25. —Saurasiddhānta. 26. —Āryabhaṭa's Midnight system. 27. —Bhāskara I. 28. —Lalla. 29. —Mahāsiddhānta. 30. —Bhāskara II. 31. —Karaṇaratna. 32. —Śrīpati. 33. —Grahalāghava. 34. —Solar eclipse diagram: Romakasiddhānta. 35. —Saurasiddhānta. 36. Colour of eclipses. 37. Conditions for non-prediction of eclipses. 38. —Inscriptional references: Lunar eclipses. 38. Solar eclipses.

##### 17. Phases of the Moon ... 241

1. Periodical appearance of the Moon. 2. Moon's luminosity. 3. Conditions of Moon's visibility. 4. Preliminaries for computation. 5. Visibility corrections: Ākṣa, Āyana and the Third. 6. Rising and setting of the Moon. 7. Moon's shadow. 8. Computation of Moon's cusps. 9. Moon's cusps—diagram.

##### 18. Heliacal rising and setting of Planets and Stars ... 254

1. Heliacal rising and setting of planets. 2. Days of rising and setting. 3. Planetary elongation for rising and setting. 4. Visibility corrections. 5. Computation of rising and setting. 6. Jupiter's rising and setting. 7. Venus: Rising and setting. 8. Rising and setting of a star. 9. Canopus: Rising.

##### 19. Conjunction of Planets ... 264

1. Types of planetary conjunctions. 2. Conjunction: Principle of computation. 3. Computation of conjunction.

##### 20. Conjunction of Stars and Planets ... 271

1. Conjunction of stars and planets. 2. Principle of planet-star conjunction. 3. Occultation of stars by planets. 4. Occultation of Rohiṇī by planets. 5. Occultation of stars by the Moon. 6. Time of star-planet conjunction.

#### V. INNOVATIVE TRENDS

##### 21. Novel Innovations ... 274

1. True longitude computation on the sphere of the zodiac. 2. Computation of True Moon. 3. Simplified astronomical procedures.



#### IV. OCCULTATION

##### 16. Eclipses ... 196

1. Cause stated in the Ṛgveda. 2. Cause of the lunar eclipse. 3. Lunar eclipse: Principle of computation. 4. Lunar eclipse computation: Vāsiṣṭha and Pauliṣa. 5. —Saurasiddhānta. 6. —Āryabhaṭīya. 7. —Āryabhaṭa's Midnight system. 8. —Emendation by Brahmagupta. 9. —Bhāskara I. 10. —Lalla. 11. —Bhāskara II. 12. —Karaṇaratna. 13. —Śrīpati. 14. —Vākyakaraṇa. 15. —Grahalāghava. 16. Lunar eclipse diagram: Vāsiṣṭha Pauliṣa. 17. —Āryabhaṭa's Midnight system. 18. —Bhāskara I. 19. —Lalla. 20. —Sūryasiddhānta. 21. —Bhāskara II. 22. —Karaṇaratna. 23. Solar eclipse: Computation: Pauliṣa. 24. —Romakasiddhānta. 25. —Saurasiddhānta. 26. —Āryabhaṭa's Midnight system. 27. —Bhāskara I. 28. —Lalla. 29. —Mahāsiddhānta. 30. —Bhāskara II. 31. —Karaṇaratna. 32. —Śrīpati. 33. —Grahalāghava. 34. —Solar eclipse diagram: Romakasiddhānta. 35. —Saurasiddhānta. 36. Colour of eclipses. 37. Conditions for non-prediction of eclipses. 38. —Inscriptional references: Lunar eclipses. 38. Solar eclipses.

##### 17. Phases of the Moon ... 241

1. Periodical appearance of the Moon. 2. Moon's luminosity. 3. Conditions of Moon's visibility. 4. Preliminaries for computation. 5. Visibility corrections: Ākṣa, Āyana and the Third. 6. Rising and setting of the Moon. 7. Moon's shadow. 8. Computation of Moon's cusps. 9. Moon's cusps—diagram.

##### 18. Heliacal rising and setting of Planets and Stars ... 254

1. Heliacal rising and setting of planets. 2. Days of rising and setting. 3. Planetary elongation for rising and setting. 4. Visibility corrections. 5. Computation of rising and setting. 6. Jupiter's rising and setting. 7. Venus: Rising and setting. 8. Rising and setting of a star. 9. Canopus: Rising.

##### 19. Conjunction of Planets ... 264

1. Types of planetary conjunctions. 2. Conjunction: Principle of computation. 3. Computation of conjunction.

##### 20. Conjunction of Stars and Planets ... 271

1. Conjunction of stars and planets. 2. Principle of planet-star conjunction. 3. Occultation of stars by planets. 4. Occultation of Rohiṇī by planets. 5. Occultation of stars by the Moon. 6. Time of star-planet conjunction.

#### V. INNOVATIVE TRENDS

##### 21. Novel Innovations ... 274

1. True longitude computation on the sphere of the zodiac. 2. Computation of True Moon. 3. Simplified astronomical procedures.

#### IV. OCCULTATION

##### 16. Eclipses ... 196

1. Cause stated in the Ṛgveda. 2. Cause of the lunar eclipse. 3. Lunar eclipse: Principle of computation. 4. Lunar eclipse computation: Vāsiṣṭha and Pauliṣa. 5. —Saurasiddhānta. 6. —Āryabhaṭīya. 7. —Āryabhaṭa's Midnight system. 8. —Emendation by Brahmagupta. 9. —Bhāskara I. 10. —Lalla. 11. —Bhāskara II. 12. —Karaṇaratna. 13. —Śrīpati. 14. —Vākyakaraṇa. 15. —Grahalāghava. 16. Lunar eclipse diagram: Vāsiṣṭha Pauliṣa. 17. —Āryabhaṭa's Midnight system. 18. —Bhāskara I. 19. —Lalla. 20. —Sūryasiddhānta. 21. —Bhāskara II. 22. —Karaṇaratna. 23. Solar eclipse: Computation: Pauliṣa. 24. —Romakasiddhānta. 25. —Saurasiddhānta. 26. —Āryabhaṭa's Midnight system. 27. —Bhāskara I. 28. —Lalla. 29. —Mahāsiddhānta. 30. —Bhāskara II. 31. —Karaṇaratna. 32. —Śrīpati. 33. —Grahalāghava. 34. —Solar eclipse diagram: Romakasiddhānta. 35. —Saurasiddhānta. 36. Colour of eclipses. 37. Conditions for non-prediction of eclipses. 38. —Inscriptional references: Lunar eclipses. 38. Solar eclipses.

##### 17. Phases of the Moon ... 241

1. Periodical appearance of the Moon. 2. Moon's luminosity. 3. Conditions of Moon's visibility. 4. Preliminaries for computation. 5. Visibility corrections: Ākṣa, Āyana and the Third. 6. Rising and setting of the Moon. 7. Moon's shadow. 8. Computation of Moon's cusps. 9. Moon's cusps—diagram.

##### 18. Heliacal rising and setting of Planets and Stars ... 254

1. Heliacal rising and setting of planets. 2. Days of rising and setting. 3. Planetary elongation for rising and setting. 4. Visibility corrections. 5. Computation of rising and setting. 6. Jupiter's rising and setting. 7. Venus: Rising and setting. 8. Rising and setting of a star. 9. Canopus: Rising.

##### 19. Conjunction of Planets ... 264

1. Types of planetary conjunctions. 2. Conjunction: Principle of computation. 3. Computation of conjunction.

##### 20. Conjunction of Stars and Planets ... 271

1. Conjunction of stars and planets. 2. Principle of planet-star conjunction. 3. Occultation of stars by planets. 4. Occultation of Rohiṇī by planets. 5. Occultation of stars by the Moon. 6. Time of star-planet conjunction.

#### V. INNOVATIVE TRENDS

##### 21. Novel Innovations ... 274

1. True longitude computation on the sphere of the zodiac. 2. Computation of True Moon. 3. Simplified astronomical procedures.

#### IV. OCCULTATION

##### 16. Eclipses ... 196

1. Cause stated in the Ṛgveda. 2. Cause of the lunar eclipse. 3. Lunar eclipse: Principle of computation. 4. Lunar eclipse computation: Vāsiṣṭha and Pauliṣa. 5. —Saurasiddhānta. 6. —Āryabhaṭīya. 7. —Āryabhaṭa's Midnight system. 8. —Emendation by Brahmagupta. 9. —Bhāskara I. 10. —Lalla. 11. —Bhāskara II. 12. —Karaṇaratna. 13. —Śrīpati. 14. —Vākyakaraṇa. 15. —Grahalāghava. 16. Lunar eclipse diagram: Vāsiṣṭha Pauliṣa. 17. —Āryabhaṭa's Midnight system. 18. —Bhāskara I. 19. —Lalla. 20. —Sūryasiddhānta. 21. —Bhāskara II. 22. —Karaṇaratna. 23. Solar eclipse: Computation: Pauliṣa. 24. —Romakasiddhānta. 25. —Saurasiddhānta. 26. —Āryabhaṭa's Midnight system. 27. —Bhāskara I. 28. —Lalla. 29. —Mahāsiddhānta. 30. —Bhāskara II. 31. —Karaṇaratna. 32. —Śrīpati. 33. —Grahalāghava. 34. —Solar eclipse diagram: Romakasiddhānta. 35. —Saurasiddhānta. 36. Colour of eclipses. 37. Conditions for non-prediction of eclipses. 38. —Inscriptional references: Lunar eclipses. 38. Solar eclipses.

##### 17. Phases of the Moon ... 241

1. Periodical appearance of the Moon. 2. Moon's luminosity. 3. Conditions of Moon's visibility. 4. Preliminaries for computation. 5. Visibility corrections: Ākṣa, Āyana and the Third. 6. Rising and setting of the Moon. 7. Moon's shadow. 8. Computation of Moon's cusps. 9. Moon's cusps—diagram.

##### 18. Heliacal rising and setting of Planets and Stars ... 254

1. Heliacal rising and setting of planets. 2. Days of rising and setting. 3. Planetary elongation for rising and setting. 4. Visibility corrections. 5. Computation of rising and setting. 6. Jupiter's rising and setting. 7. Venus: Rising and setting. 8. Rising and setting of a star. 9. Canopus: Rising.

##### 19. Conjunction of Planets ... 264

1. Types of planetary conjunctions. 2. Conjunction: Principle of computation. 3. Computation of conjunction.

##### 20. Conjunction of Stars and Planets ... 271

1. Conjunction of stars and planets. 2. Principle of planet-star conjunction. 3. Occultation of stars by planets. 4. Occultation of Rohiṇī by planets. 5. Occultation of stars by the Moon. 6. Time of star-planet conjunction.

#### V. INNOVATIVE TRENDS

##### 21. Novel Innovations ... 274

1. True longitude computation on the sphere of the zodiac. 2. Computation of True Moon. 3. Simplified astronomical procedures.

#### IV. OCCULTATION

##### 16. Eclipses ... 196

1. Cause stated in the Ṛgveda. 2. Cause of the lunar eclipse. 3. Lunar eclipse: Principle of computation. 4. Lunar eclipse computation: Vāsiṣṭha and Pauliṣa. 5. —Saurasiddhānta. 6. —Āryabhaṭīya. 7. —Āryabhaṭa's Midnight system. 8. —Emendation by Brahmagupta. 9. —Bhāskara I. 10. —Lalla. 11. —Bhāskara II. 12. —Karaṇaratna. 13. —Śrīpati. 14. —Vākyakaraṇa. 15. —Grahalāghava. 16. Lunar eclipse diagram: Vāsiṣṭha Pauliṣa. 17. —Āryabhaṭa's Midnight system. 18. —Bhāskara I. 19. —Lalla. 20. —Sūryasiddhānta. 21. —Bhāskara II. 22. —Karaṇaratna. 23. Solar eclipse: Computation: Pauliṣa. 24. —Romakasiddhānta. 25. —Saurasiddhānta. 26. —Āryabhaṭa's Midnight system. 27. —Bhāskara I. 28. —Lalla. 29. —Mahāsiddhānta. 30. —Bhāskara II. 31. —Karaṇaratna. 32. —Śrīpati. 33. —Grahalāghava. 34. —Solar eclipse diagram: Romakasiddhānta. 35. —Saurasiddhānta. 36. Colour of eclipses. 37. Conditions for non-prediction of eclipses. 38. —Inscriptional references: Lunar eclipses. 38. Solar eclipses.

##### 17. Phases of the Moon ... 241

1. Periodical appearance of the Moon. 2. Moon's luminosity. 3. Conditions of Moon's visibility. 4. Preliminaries for computation. 5. Visibility corrections: Ākṣa, Āyana and the Third. 6. Rising and setting of the Moon. 7. Moon's shadow. 8. Computation of Moon's cusps. 9. Moon's cusps—diagram.

##### 18. Heliacal rising and setting of Planets and Stars ... 254

1. Heliacal rising and setting of planets. 2. Days of rising and setting. 3. Planetary elongation for rising and setting. 4. Visibility corrections. 5. Computation of rising and setting. 6. Jupiter's rising and setting. 7. Venus: Rising and setting. 8. Rising and setting of a star. 9. Canopus: Rising.

##### 19. Conjunction of Planets ... 264

1. Types of planetary conjunctions. 2. Conjunction: Principle of computation. 3. Computation of conjunction.

##### 20. Conjunction of Stars and Planets ... 271

1. Conjunction of stars and planets. 2. Principle of planet-star conjunction. 3. Occultation of stars by planets. 4. Occultation of Rohiṇī by planets. 5. Occultation of stars by the Moon. 6. Time of star-planet conjunction.

#### V. INNOVATIVE TRENDS

##### 21. Novel Innovations ... 274

1. True longitude computation on the sphere of the zodiac. 2. Computation of True Moon. 3. Simplified astronomical procedures.

#### IV. OCCULTATION

##### 16. Eclipses ... 196

1. Cause stated in the Ṛgveda. 2. Cause of the lunar eclipse. 3. Lunar eclipse: Principle of computation. 4. Lunar eclipse computation: Vāsiṣṭha and Pauliṣa. 5. —Saurasiddhānta. 6. —Āryabhaṭīya. 7. —Āryabhaṭa's Midnight system. 8. —Emendation by Brahmagupta. 9. —Bhāskara I. 10. —Lalla. 11. —Bhāskara II. 12. —Karaṇaratna. 13. —Śrīpati. 14. —Vākyakaraṇa. 15. —Grahalāghava. 16. Lunar eclipse diagram: Vāsiṣṭha Pauliṣa. 17. —Āryabhaṭa's Midnight system. 18. —Bhāskara I. 19. —Lalla. 20. —Sūryasiddhānta. 21. —Bhāskara II. 22. —Karaṇaratna. 23. Solar eclipse: Computation: Pauliṣa. 24. —Romakasiddhānta. 25. —Saurasiddhānta. 26. —Āryabhaṭa's Midnight system. 27. —Bhāskara I. 28. —Lalla. 29. —Mahāsiddhānta. 30. —Bhāskara II. 31. —Karaṇaratna. 32. —Śrīpati. 33. —Grahalāghava. 34. —Solar eclipse diagram: Romakasiddhānta. 35. —Saurasiddhānta. 36. Colour of eclipses. 37. Conditions for non-prediction of eclipses. 38. —Inscriptional references: Lunar eclipses. 38. Solar eclipses.

##### 17. Phases of the Moon ... 241

1. Periodical appearance of the Moon. 2. Moon's luminosity. 3. Conditions of Moon's visibility. 4. Preliminaries for computation. 5. Visibility corrections: Ākṣa, Āyana and the Third. 6. Rising and setting of the Moon. 7. Moon's shadow. 8. Computation of Moon's cusps. 9. Moon's cusps—diagram.

##### 18. Heliacal rising and setting of Planets and Stars ... 254

1. Heliacal rising and setting of planets. 2. Days of rising and setting. 3. Planetary elongation for rising and setting. 4. Visibility corrections. 5. Computation of rising and setting. 6. Jupiter's rising and setting. 7. Venus: Rising and setting. 8. Rising and setting of a star. 9. Canopus: Rising.

##### 19. Conjunction of Planets ... 264

1. Types of planetary conjunctions. 2. Conjunction: Principle of computation. 3. Computation of conjunction.

##### 20. Conjunction of Stars and Planets ... 271

1. Conjunction of stars and planets. 2. Principle of planet-star conjunction. 3. Occultation of stars by planets. 4. Occultation of Rohiṇī by planets. 5. Occultation of stars by the Moon. 6. Time of star-planet conjunction.

#### V. INNOVATIVE TRENDS

##### 21. Novel Innovations ... 274

1. True longitude computation on the sphere of the zodiac. 2. Computation of True Moon. 3. Simplified astronomical procedures.

#### IV. OCCULTATION

##### 16. Eclipses ... 196

1. Cause stated in the Ṛgveda. 2. Cause of the lunar eclipse. 3. Lunar eclipse: Principle of computation. 4. Lunar eclipse computation: Vāsiṣṭha and Pauliṣa. 5. —Saurasiddhānta. 6. —Āryabhaṭīya. 7. —Āryabhaṭa's Midnight system. 8. —Emendation by Brahmagupta. 9. —Bhāskara I. 10. —Lalla. 11. —Bhāskara II. 12. —Karaṇaratna. 13. —Śrīpati. 14. —Vākyakaraṇa. 15. —Grahalāghava. 16. Lunar eclipse diagram: Vāsiṣṭha Pauliṣa. 17. —Āryabhaṭa's Midnight system. 18. —Bhāskara I. 19. —Lalla. 20. —Sūryasiddhānta. 21. —Bhāskara II. 22. —Karaṇaratna. 23. Solar eclipse: Computation: Pauliṣa. 24. —Romakasiddhānta. 25. —Saurasiddhānta. 26. —Āryabhaṭa's Midnight system. 27. —Bhāskara I. 28. —Lalla. 29. —Mahāsiddhānta. 30. —Bhāskara II. 31. —Karaṇaratna. 32. —Śrīpati. 33. —Grahalāghava. 34. —Solar eclipse diagram: Romakasiddhānta. 35. —Saurasiddhānta. 36. Colour of eclipses. 37. Conditions for non-prediction of eclipses. 38. —Inscriptional references: Lunar eclipses. 38. Solar eclipses.

##### 17. Phases of the Moon ... 241

1. Periodical appearance of the Moon. 2. Moon's luminosity. 3. Conditions of Moon's visibility. 4. Preliminaries for computation. 5. Visibility corrections: Ākṣa, Āyana and the Third. 6. Rising and setting of the Moon. 7. Moon's shadow. 8. Computation of Moon's cusps. 9. Moon's cusps—diagram.

##### 18. Heliacal rising and setting of Planets and Stars ... 254

1. Heliacal rising and setting of planets. 2. Days of rising and setting. 3. Planetary elongation for rising and setting. 4. Visibility corrections. 5. Computation of rising and setting. 6. Jupiter's rising and setting. 7. Venus: Rising and setting. 8. Rising and setting of a star. 9. Canopus: Rising.

##### 19. Conjunction of Planets ... 264

1. Types of planetary conjunctions. 2. Conjunction: Principle of computation. 3. Computation of conjunction.

##### 20. Conjunction of Stars and Planets ... 271

1. Conjunction of stars and planets. 2. Principle of planet-star conjunction. 3. Occultation of stars by planets. 4. Occultation of Rohiṇī by planets. 5. Occultation of stars by the Moon. 6. Time of star-planet conjunction.

#### V. INNOVATIVE TRENDS

##### 21. Novel Innovations ... 274

1. True longitude computation on the sphere of the zodiac. 2. Computation of True Moon. 3. Simplified astronomical procedures.

#### IV. OCCULTATION

##### 16. Eclipses ... 196

1. Cause stated in the Ṛgveda. 2. Cause of the lunar eclipse. 3. Lunar eclipse: Principle of computation. 4. Lunar eclipse computation: Vāsiṣṭha and Pauliṣa. 5. —Saurasiddhānta. 6. —Āryabhaṭīya. 7. —Āryabhaṭa's Midnight system. 8. —Emendation by Brahmagupta. 9. —Bhāskara I. 10. —Lalla. 11. —Bhāskara II. 12. —Karaṇaratna. 13. —Śrīpati. 14. —Vākyakaraṇa. 15. —Grahalāghava. 16. Lunar eclipse diagram: Vāsiṣṭha Pauliṣa. 17. —Āryabhaṭa's Midnight system. 18. —Bhāskara I. 19. —Lalla. 20. —Sūryasiddhānta. 21. —Bhāskara II. 22. —Karaṇaratna. 23. Solar eclipse: Computation: Pauliṣa. 24. —Romakasiddhānta. 25. —Saurasiddhānta. 26. —Āryabhaṭa's Midnight system. 27. —Bhāskara I. 28. —Lalla. 29. —Mahāsiddhānta. 30. —Bhāskara II. 31. —Karaṇaratna. 32. —Śrīpati. 33. —Grahalāghava. 34. —Solar eclipse diagram: Romakasiddhānta. 35. —Saurasiddhānta. 36. Colour of eclipses. 37. Conditions for non-prediction of eclipses. 38. —Inscriptional references: Lunar eclipses. 38. Solar eclipses.

##### 17. Phases of the Moon ... 241

1. Periodical appearance of the Moon. 2. Moon's luminosity. 3. Conditions of Moon's visibility. 4. Preliminaries for computation. 5. Visibility corrections: Ākṣa, Āyana and the Third. 6. Rising and setting of the Moon. 7. Moon's shadow. 8. Computation of Moon's cusps. 9. Moon's cusps—diagram.

##### 18. Heliacal rising and setting of Planets and Stars ... 254

1. Heliacal rising and setting of planets. 2. Days of rising and setting. 3. Planetary elongation for rising and setting. 4. Visibility corrections. 5. Computation of rising and setting. 6. Jupiter's rising and setting. 7. Venus: Rising and setting. 8. Rising and setting of a star. 9. Canopus: Rising.

##### 19. Conjunction of Planets ... 264

1. Types of planetary conjunctions. 2. Conjunction: Principle of computation. 3. Computation of conjunction.

##### 20. Conjunction of Stars and Planets ... 271

1. Conjunction of stars and planets. 2. Principle of planet-star conjunction. 3. Occultation of stars by planets. 4. Occultation of Rohiṇī by planets. 5. Occultation of stars by the Moon. 6. Time of star-planet conjunction.

#### V. INNOVATIVE TRENDS

##### 21. Novel Innovations ... 274

1. True longitude computation on the sphere of the zodiac. 2. Computation of True Moon. 3. Simplified astronomical procedures.

#### IV. OCCULTATION

##### 16. Eclipses ... 196

1. Cause stated in the Ṛgveda. 2. Cause of the lunar eclipse. 3. Lunar eclipse: Principle of computation. 4. Lunar eclipse computation: Vāsiṣṭha and Pauliṣa. 5. —Saurasiddhānta. 6. —Āryabhaṭīya. 7. —Āryabhaṭa's Midnight system. 8. —Emendation by Brahmagupta. 9. —Bhāskara I. 10. —Lalla. 11. —Bhāskara II. 12. —Karaṇaratna. 13. —Śrīpati. 14. —Vākyakaraṇa. 15. —Grahalāghava. 16. Lunar eclipse diagram: Vāsiṣṭha Pauliṣa. 17. —Āryabhaṭa's Midnight system. 18. —Bhāskara I. 19. —Lalla. 20. —Sūryasiddhānta. 21. —Bhāskara II. 22. —Karaṇaratna. 23. Solar eclipse: Computation: Pauliṣa. 24. —Romakasiddhānta. 25. —Saurasiddhānta. 26. —Āryabhaṭa's Midnight system. 27. —Bhāskara I. 28. —Lalla. 29. —Mahāsiddhānta. 30. —Bhāskara II. 31. —Karaṇaratna. 32. —Śrīpati. 33. —Grahalāghava. 34. —Solar eclipse diagram: Romakasiddhānta. 35. —Saurasiddhānta. 36. Colour of eclipses. 37. Conditions for non-prediction of eclipses. 38. —Inscriptional references: Lunar eclipses. 38. Solar eclipses.

##### 17. Phases of the Moon ... 241

1. Periodical appearance of the Moon. 2. Moon's luminosity. 3. Conditions of Moon's visibility. 4. Preliminaries for computation. 5. Visibility corrections: Ākṣa, Āyana and the Third. 6. Rising and setting of the Moon. 7. Moon's shadow. 8. Computation of Moon's cusps. 9. Moon's cusps—diagram.

##### 18. Heliacal rising and setting of Planets and Stars ... 254

1. Heliacal rising and setting of planets. 2. Days of rising and setting. 3. Planetary elongation for rising and setting. 4. Visibility corrections. 5. Computation of rising and setting. 6. Jupiter's rising and setting. 7. Venus: Rising and setting. 8. Rising and setting of a star. 9. Canopus: Rising.

##### 19. Conjunction of Planets ... 264

1. Types of planetary conjunctions. 2. Conjunction: Principle of computation. 3. Computation of conjunction.

##### 20. Conjunction of Stars and Planets ... 271

1. Conjunction of stars and planets. 2. Principle of planet-star conjunction. 3. Occultation of stars by planets. 4. Occultation of Rohiṇī by planets. 5. Occultation of stars by the Moon. 6. Time of star-planet conjunction.

#### V. INNOVATIVE TRENDS

##### 21. Novel Innovations ... 274

1. True longitude computation on the sphere of the zodiac. 2. Computation of True Moon. 3. Simplified astronomical procedures.



#### IV. OCCULTATION

##### 16. Eclipses ... 196

1. Cause stated in the Ṛgveda. 2. Cause of the lunar eclipse. 3. Lunar eclipse: Principle of computation. 4. Lunar eclipse computation: Vāsiṣṭha and Pauliṣa. 5. —Saurasiddhānta. 6. —Āryabhaṭīya. 7. —Āryabhaṭa's Midnight system. 8. —Emendation by Brahmagupta. 9. —Bhāskara I. 10. —Lalla. 11. —Bhāskara II. 12. —Karaṇaratna. 13. —Śrīpati. 14. —Vākyakaraṇa. 15. —Grahalāghava. 16. Lunar eclipse diagram: Vāsiṣṭha Pauliṣa. 17. —Āryabhaṭa's Midnight system. 18. —Bhāskara I. 19. —Lalla. 20. —Sūryasiddhānta. 21. —Bhāskara II. 22. —Karaṇaratna. 23. Solar eclipse: Computation: Pauliṣa. 24. —Romakasiddhānta. 25. —Saurasiddhānta. 26. —Āryabhaṭa's Midnight system. 27. —Bhāskara I. 28. —Lalla. 29. —Mahāśiddhānta. 30. —Bhāskara II. 31. —Karaṇaratna. 32. —Śrīpati. 33. —Grahalāghava. 34. —Solar eclipse diagram: Romakasiddhānta. 35. —Saurasiddhānta. 36. Colour of eclipses. 37. Conditions for non-prediction of eclipses. 38. —Inscriptional references: Lunar eclipses. 38. Solar eclipses.

##### 17. Phases of the Moon ... 241

1. Periodical appearance of the Moon. 2. Moon's luminosity. 3. Conditions of Moon's visibility. 4. Preliminaries for computation. 5. Visibility corrections: Ākṣa, Āyana and the Third. 6. Rising and setting of the Moon. 7. Moon's shadow. 8. Computation of Moon's cusps. 9. Moon's cusps—diagram.

##### 18. Heliacal rising and setting of Planets and Stars ... 254

1. Heliacal rising and setting of planets. 2. Days of rising and setting. 3. Planetary elongation for rising and setting. 4. Visibility corrections. 5. Computation of rising and setting. 6. Jupiter's rising and setting. 7. Venus: Rising and setting. 8. Rising and setting of a star. 9. Canopus: Rising.

##### 19. Conjunction of Planets ... 264

1. Types of planetary conjunctions. 2. Conjunction: Principle of computation. 3. Computation of conjunction.

##### 20. Conjunction of Stars and Planets ... 271

1. Conjunction of stars and planets. 2. Principle of planet-star conjunction. 3. Occultation of stars by planets. 4. Occultation of Rohiṇī by planets. 5. Occultation of stars by the Moon. 6. Time of star-planet conjunction.

#### V. INNOVATIVE TRENDS

##### 21. Novel Innovations ... 274

1. True longitude computation on the sphere of the zodiac. 2. Computation of True Moon. 3. Simplified astronomical procedures.

#### IV. OCCULTATION

##### 16. Eclipses ... 196

1. Cause stated in the Ṛgveda. 2. Cause of the lunar eclipse. 3. Lunar eclipse: Principle of computation. 4. Lunar eclipse computation: Vāsiṣṭha and Pauliṣa. 5. —Saurasiddhānta. 6. —Āryabhaṭīya. 7. —Āryabhaṭa's Midnight system. 8. —Emendation by Brahmagupta. 9. —Bhāskara I. 10. —Lalla. 11. —Bhāskara II. 12. —Karaṇaratna. 13. —Śrīpati. 14. —Vākyakaraṇa. 15. —Grahalāghava. 16. Lunar eclipse diagram: Vāsiṣṭha Pauliṣa. 17. —Āryabhaṭa's Midnight system. 18. —Bhāskara I. 19. —Lalla. 20. —Sūryasiddhānta. 21. —Bhāskara II. 22. —Karaṇaratna. 23. Solar eclipse: Computation: Pauliṣa. 24. —Romakasiddhānta. 25. —Saurasiddhānta. 26. —Āryabhaṭa's Midnight system. 27. —Bhāskara I. 28. —Lalla. 29. —Mahāsiddhānta. 30. —Bhāskara II. 31. —Karaṇaratna. 32. —Śrīpati. 33. —Grahalāghava. 34. —Solar eclipse diagram: Romakasiddhānta. 35. —Saurasiddhānta. 36. Colour of eclipses. 37. Conditions for non-prediction of eclipses. 38. —Inscriptional references: Lunar eclipses. 38. Solar eclipses.

##### 17. Phases of the Moon ... 241

1. Periodical appearance of the Moon. 2. Moon's luminosity. 3. Conditions of Moon's visibility. 4. Preliminaries for computation. 5. Visibility corrections: Ākṣa, Āyana and the Third. 6. Rising and setting of the Moon. 7. Moon's shadow. 8. Computation of Moon's cusps. 9. Moon's cusps—diagram.

##### 18. Heliacal rising and setting of Planets and Stars ... 254

1. Heliacal rising and setting of planets. 2. Days of rising and setting. 3. Planetary elongation for rising and setting. 4. Visibility corrections. 5. Computation of rising and setting. 6. Jupiter's rising and setting. 7. Venus: Rising and setting. 8. Rising and setting of a star. 9. Canopus: Rising.

##### 19. Conjunction of Planets ... 264

1. Types of planetary conjunctions. 2. Conjunction: Principle of computation. 3. Computation of conjunction.

##### 20. Conjunction of Stars and Planets ... 271

1. Conjunction of stars and planets. 2. Principle of planet-star conjunction. 3. Occultation of stars by planets. 4. Occultation of Rohiṇī by planets. 5. Occultation of stars by the Moon. 6. Time of star-planet conjunction.

#### V. INNOVATIVE TRENDS

##### 21. Novel Innovations ... 274

1. True longitude computation on the sphere of the zodiac. 2. Computation of True Moon. 3. Simplified astronomical procedures.

#### IV. OCCULTATION

##### 16. Eclipses ... 196

1. Cause stated in the Ṛgveda. 2. Cause of the lunar eclipse. 3. Lunar eclipse: Principle of computation. 4. Lunar eclipse computation: Vāsiṣṭha and Pauliṣa. 5. —Saurasiddhānta. 6. —Āryabhaṭīya. 7. —Āryabhaṭa's Midnight system. 8. —Emendation by Brahmagupta. 9. —Bhāskara I. 10. —Lalla. 11. —Bhāskara II. 12. —Karaṇaratna. 13. —Śrīpati. 14. —Vākyakaraṇa. 15. —Grahalāghava. 16. Lunar eclipse diagram: Vāsiṣṭha Pauliṣa. 17. —Āryabhaṭa's Midnight system. 18. —Bhāskara I. 19. —Lalla. 20. —Sūryasiddhānta. 21. —Bhāskara II. 22. —Karaṇaratna. 23. Solar eclipse: Computation: Pauliṣa. 24. —Romakasiddhānta. 25. —Saurasiddhānta. 26. —Āryabhaṭa's Midnight system. 27. —Bhāskara I. 28. —Lalla. 29. —Mahāsiddhānta. 30. —Bhāskara II. 31. —Karaṇaratna. 32. —Śrīpati. 33. —Grahalāghava. 34. —Solar eclipse diagram: Romakasiddhānta. 35. —Saurasiddhānta. 36. Colour of eclipses. 37. Conditions for non-prediction of eclipses. 38. —Inscriptional references: Lunar eclipses. 38. Solar eclipses.

##### 17. Phases of the Moon ... 241

1. Periodical appearance of the Moon. 2. Moon's luminosity. 3. Conditions of Moon's visibility. 4. Preliminaries for computation. 5. Visibility corrections: Ākṣa, Āyana and the Third. 6. Rising and setting of the Moon. 7. Moon's shadow. 8. Computation of Moon's cusps. 9. Moon's cusps—diagram.

##### 18. Heliacal rising and setting of Planets and Stars ... 254

1. Heliacal rising and setting of planets. 2. Days of rising and setting. 3. Planetary elongation for rising and setting. 4. Visibility corrections. 5. Computation of rising and setting. 6. Jupiter's rising and setting. 7. Venus: Rising and setting. 8. Rising and setting of a star. 9. Canopus: Rising.

##### 19. Conjunction of Planets ... 264

1. Types of planetary conjunctions. 2. Conjunction: Principle of computation. 3. Computation of conjunction.

##### 20. Conjunction of Stars and Planets ... 271

1. Conjunction of stars and planets. 2. Principle of planet-star conjunction. 3. Occultation of stars by planets. 4. Occultation of Rohiṇī by planets. 5. Occultation of stars by the Moon. 6. Time of star-planet conjunction.

#### V. INNOVATIVE TRENDS

##### 21. Novel Innovations ... 274

1. True longitude computation on the sphere of the zodiac. 2. Computation of True Moon. 3. Simplified astronomical procedures.

#### IV. OCCULTATION

##### 16. Eclipses ... 196

1. Cause stated in the Ṛgveda. 2. Cause of the lunar eclipse. 3. Lunar eclipse: Principle of computation. 4. Lunar eclipse computation: Vāsiṣṭha and Pauliṣa. 5. —Saurasiddhānta. 6. —Āryabhaṭīya. 7. —Āryabhaṭa's Midnight system. 8. —Emendation by Brahmagupta. 9. —Bhāskara I. 10. —Lalla. 11. —Bhāskara II. 12. —Karaṇaratna. 13. —Śrīpati. 14. —Vākyakaraṇa. 15. —Grahalāghava. 16. Lunar eclipse diagram: Vāsiṣṭha Pauliṣa. 17. —Āryabhaṭa's Midnight system. 18. —Bhāskara I. 19. —Lalla. 20. —Sūryasiddhānta. 21. —Bhāskara II. 22. —Karaṇaratna. 23. Solar eclipse: Computation: Pauliṣa. 24. —Romakasiddhānta. 25. —Saurasiddhānta. 26. —Āryabhaṭa's Midnight system. 27. —Bhāskara I. 28. —Lalla. 29. —Mahāsiddhānta. 30. —Bhāskara II. 31. —Karaṇaratna. 32. —Śrīpati. 33. —Grahalāghava. 34. —Solar eclipse diagram: Romakasiddhānta. 35. —Saurasiddhānta. 36. Colour of eclipses. 37. Conditions for non-prediction of eclipses. 38. —Inscriptional references: Lunar eclipses. 38. Solar eclipses.

##### 17. Phases of the Moon ... 241

1. Periodical appearance of the Moon. 2. Moon's luminosity. 3. Conditions of Moon's visibility. 4. Preliminaries for computation. 5. Visibility corrections: Ākṣa, Āyana and the Third. 6. Rising and setting of the Moon. 7. Moon's shadow. 8. Computation of Moon's cusps. 9. Moon's cusps—diagram.

##### 18. Heliacal rising and setting of Planets and Stars ... 254

1. Heliacal rising and setting of planets. 2. Days of rising and setting. 3. Planetary elongation for rising and setting. 4. Visibility corrections. 5. Computation of rising and setting. 6. Jupiter's rising and setting. 7. Venus: Rising and setting. 8. Rising and setting of a star. 9. Canopus: Rising.

##### 19. Conjunction of Planets ... 264

1. Types of planetary conjunctions. 2. Conjunction: Principle of computation. 3. Computation of conjunction.

##### 20. Conjunction of Stars and Planets ... 271

1. Conjunction of stars and planets. 2. Principle of planet-star conjunction. 3. Occultation of stars by planets. 4. Occultation of Rohiṇī by planets. 5. Occultation of stars by the Moon. 6. Time of star-planet conjunction.

#### V. INNOVATIVE TRENDS

##### 21. Novel Innovations ... 274

1. True longitude computation on the sphere of the zodiac. 2. Computation of True Moon. 3. Simplified astronomical procedures.

#### IV. OCCULTATION

##### 16. Eclipses ... 196

1. Cause stated in the Ṛgveda. 2. Cause of the lunar eclipse. 3. Lunar eclipse: Principle of computation. 4. Lunar eclipse computation: Vāsiṣṭha and Pauliṣa. 5. —Saurasiddhānta. 6. —Āryabhaṭīya. 7. —Āryabhaṭa's Midnight system. 8. —Emendation by Brahmagupta. 9. —Bhāskara I. 10. —Lalla. 11. —Bhāskara II. 12. —Karaṇaratna. 13. —Śrīpati. 14. —Vākyakaraṇa. 15. —Grahalāghava. 16. Lunar eclipse diagram: Vāsiṣṭha Pauliṣa. 17. —Āryabhaṭa's Midnight system. 18. —Bhāskara I. 19. —Lalla. 20. —Sūryasiddhānta. 21. —Bhāskara II. 22. —Karaṇaratna. 23. Solar eclipse: Computation: Pauliṣa. 24. —Romakasiddhānta. 25. —Saurasiddhānta. 26. —Āryabhaṭa's Midnight system. 27. —Bhāskara I. 28. —Lalla. 29. —Mahāsiddhānta. 30. —Bhāskara II. 31. —Karaṇaratna. 32. —Śrīpati. 33. —Grahalāghava. 34. —Solar eclipse diagram: Romakasiddhānta. 35. —Saurasiddhānta. 36. Colour of eclipses. 37. Conditions for non-prediction of eclipses. 38. —Inscriptional references: Lunar eclipses. 38. Solar eclipses.

##### 17. Phases of the Moon ... 241

1. Periodical appearance of the Moon. 2. Moon's luminosity. 3. Conditions of Moon's visibility. 4. Preliminaries for computation. 5. Visibility corrections: Ākṣa, Āyana and the Third. 6. Rising and setting of the Moon. 7. Moon's shadow. 8. Computation of Moon's cusps. 9. Moon's cusps—diagram.

##### 18. Heliacal rising and setting of Planets and Stars ... 254

1. Heliacal rising and setting of planets. 2. Days of rising and setting. 3. Planetary elongation for rising and setting. 4. Visibility corrections. 5. Computation of rising and setting. 6. Jupiter's rising and setting. 7. Venus: Rising and setting. 8. Rising and setting of a star. 9. Canopus: Rising.

##### 19. Conjunction of Planets ... 264

1. Types of planetary conjunctions. 2. Conjunction: Principle of computation. 3. Computation of conjunction.

##### 20. Conjunction of Stars and Planets ... 271

1. Conjunction of stars and planets. 2. Principle of planet-star conjunction. 3. Occultation of stars by planets. 4. Occultation of Rohiṇī by planets. 5. Occultation of stars by the Moon. 6. Time of star-planet conjunction.

#### V. INNOVATIVE TRENDS

##### 21. Novel Innovations ... 274

1. True longitude computation on the sphere of the zodiac. 2. Computation of True Moon. 3. Simplified astronomical procedures.

#### IV. OCCULTATION

##### 16. Eclipses ... 196

1. Cause stated in the Ṛgveda. 2. Cause of the lunar eclipse. 3. Lunar eclipse: Principle of computation. 4. Lunar eclipse computation: Vāsiṣṭha and Pauliṣa. 5. —Saurasiddhānta. 6. —Āryabhaṭīya. 7. —Āryabhaṭa's Midnight system. 8. —Emendation by Brahmagupta. 9. —Bhāskara I. 10. —Lalla. 11. —Bhāskara II. 12. —Karaṇaratna. 13. —Śrīpati. 14. —Vākyakaraṇa. 15. —Grahalāghava. 16. Lunar eclipse diagram: Vāsiṣṭha Pauliṣa. 17. —Āryabhaṭa's Midnight system. 18. —Bhāskara I. 19. —Lalla. 20. —Sūryasiddhānta. 21. —Bhāskara II. 22. —Karaṇaratna. 23. Solar eclipse: Computation: Pauliṣa. 24. —Romakasiddhānta. 25. —Saurasiddhānta. 26. —Āryabhaṭa's Midnight system. 27. —Bhāskara I. 28. —Lalla. 29. —Mahāsiddhānta. 30. —Bhāskara II. 31. —Karaṇaratna. 32. —Śrīpati. 33. —Grahalāghava. 34. —Solar eclipse diagram: Romakasiddhānta. 35. —Saurasiddhānta. 36. Colour of eclipses. 37. Conditions for non-prediction of eclipses. 38. —Inscriptional references: Lunar eclipses. 38. Solar eclipses.

##### 17. Phases of the Moon ... 241

1. Periodical appearance of the Moon. 2. Moon's luminosity. 3. Conditions of Moon's visibility. 4. Preliminaries for computation. 5. Visibility corrections: Ākṣa, Āyana and the Third. 6. Rising and setting of the Moon. 7. Moon's shadow. 8. Computation of Moon's cusps. 9. Moon's cusps—diagram.

##### 18. Heliacal rising and setting of Planets and Stars ... 254

1. Heliacal rising and setting of planets. 2. Days of rising and setting. 3. Planetary elongation for rising and setting. 4. Visibility corrections. 5. Computation of rising and setting. 6. Jupiter's rising and setting. 7. Venus: Rising and setting. 8. Rising and setting of a star. 9. Canopus: Rising.

##### 19. Conjunction of Planets ... 264

1. Types of planetary conjunctions. 2. Conjunction: Principle of computation. 3. Computation of conjunction.

##### 20. Conjunction of Stars and Planets ... 271

1. Conjunction of stars and planets. 2. Principle of planet-star conjunction. 3. Occultation of stars by planets. 4. Occultation of Rohiṇī by planets. 5. Occultation of stars by the Moon. 6. Time of star-planet conjunction.

#### V. INNOVATIVE TRENDS

##### 21. Novel Innovations ... 274

1. True longitude computation on the sphere of the zodiac. 2. Computation of True Moon. 3. Simplified astronomical procedures.

#### IV. OCCULTATION

##### 16. Eclipses ... 196

1. Cause stated in the Ṛgveda. 2. Cause of the lunar eclipse. 3. Lunar eclipse: Principle of computation. 4. Lunar eclipse computation: Vāsiṣṭha and Pauliṣa. 5. —Saurasiddhānta. 6. —Āryabhaṭīya. 7. —Āryabhaṭa's Midnight system. 8. —Emendation by Brahmagupta. 9. —Bhāskara I. 10. —Lalla. 11. —Bhāskara II. 12. —Karaṇaratna. 13. —Śrīpati. 14. —Vākyakaraṇa. 15. —Grahalāghava. 16. Lunar eclipse diagram: Vāsiṣṭha Pauliṣa. 17. —Āryabhaṭa's Midnight system. 18. —Bhāskara I. 19. —Lalla. 20. —Sūryasiddhānta. 21. —Bhāskara II. 22. —Karaṇaratna. 23. Solar eclipse: Computation: Pauliṣa. 24. —Romakasiddhānta. 25. —Saurasiddhānta. 26. —Āryabhaṭa's Midnight system. 27. —Bhāskara I. 28. —Lalla. 29. —Mahāsiddhānta. 30. —Bhāskara II. 31. —Karaṇaratna. 32. —Śrīpati. 33. —Grahalāghava. 34. —Solar eclipse diagram: Romakasiddhānta. 35. —Saurasiddhānta. 36. Colour of eclipses. 37. Conditions for non-prediction of eclipses. 38. —Inscriptional references: Lunar eclipses. 38. Solar eclipses.

##### 17. Phases of the Moon ... 241

1. Periodical appearance of the Moon. 2. Moon's luminosity. 3. Conditions of Moon's visibility. 4. Preliminaries for computation. 5. Visibility corrections: Ākṣa, Āyana and the Third. 6. Rising and setting of the Moon. 7. Moon's shadow. 8. Computation of Moon's cusps. 9. Moon's cusps—diagram.

##### 18. Heliacal rising and setting of Planets and Stars ... 254

1. Heliacal rising and setting of planets. 2. Days of rising and setting. 3. Planetary elongation for rising and setting. 4. Visibility corrections. 5. Computation of rising and setting. 6. Jupiter's rising and setting. 7. Venus: Rising and setting. 8. Rising and setting of a star. 9. Canopus: Rising.

##### 19. Conjunction of Planets ... 264

1. Types of planetary conjunctions. 2. Conjunction: Principle of computation. 3. Computation of conjunction.

##### 20. Conjunction of Stars and Planets ... 271

1. Conjunction of stars and planets. 2. Principle of planet-star conjunction. 3. Occultation of stars by planets. 4. Occultation of Rohiṇī by planets. 5. Occultation of stars by the Moon. 6. Time of star-planet conjunction.

#### V. INNOVATIVE TRENDS

##### 21. Novel Innovations ... 274

1. True longitude computation on the sphere of the zodiac. 2. Computation of True Moon. 3. Simplified astronomical procedures.

#### IV. OCCULTATION

##### 16. Eclipses ... 196

1. Cause stated in the Ṛgveda. 2. Cause of the lunar eclipse. 3. Lunar eclipse: Principle of computation. 4. Lunar eclipse computation: Vāsiṣṭha and Pauliṣa. 5. —Saurasiddhānta. 6. —Āryabhaṭīya. 7. —Āryabhaṭa's Midnight system. 8. —Emendation by Brahmagupta. 9. —Bhāskara I. 10. —Lalla. 11. —Bhāskara II. 12. —Karaṇaratna. 13. —Śrīpati. 14. —Vākyakaraṇa. 15. —Grahalāghava. 16. Lunar eclipse diagram: Vāsiṣṭha Pauliṣa. 17. —Āryabhaṭa's Midnight system. 18. —Bhāskara I. 19. —Lalla. 20. —Sūryasiddhānta. 21. —Bhāskara II. 22. —Karaṇaratna. 23. Solar eclipse: Computation: Pauliṣa. 24. —Romakasiddhānta. 25. —Saurasiddhānta. 26. —Āryabhaṭa's Midnight system. 27. —Bhāskara I. 28. —Lalla. 29. —Mahāsiddhānta. 30. —Bhāskara II. 31. —Karaṇaratna. 32. —Śrīpati. 33. —Grahalāghava. 34. —Solar eclipse diagram: Romakasiddhānta. 35. —Saurasiddhānta. 36. Colour of eclipses. 37. Conditions for non-prediction of eclipses. 38. —Inscriptional references: Lunar eclipses. 38. Solar eclipses.

##### 17. Phases of the Moon ... 241

1. Periodical appearance of the Moon. 2. Moon's luminosity. 3. Conditions of Moon's visibility. 4. Preliminaries for computation. 5. Visibility corrections: Ākṣa, Āyana and the Third. 6. Rising and setting of the Moon. 7. Moon's shadow. 8. Computation of Moon's cusps. 9. Moon's cusps—diagram.

##### 18. Heliacal rising and setting of Planets and Stars ... 254

1. Heliacal rising and setting of planets. 2. Days of rising and setting. 3. Planetary elongation for rising and setting. 4. Visibility corrections. 5. Computation of rising and setting. 6. Jupiter's rising and setting. 7. Venus: Rising and setting. 8. Rising and setting of a star. 9. Canopus: Rising.

##### 19. Conjunction of Planets ... 264

1. Types of planetary conjunctions. 2. Conjunction: Principle of computation. 3. Computation of conjunction.

##### 20. Conjunction of Stars and Planets ... 271

1. Conjunction of stars and planets. 2. Principle of planet-star conjunction. 3. Occultation of stars by planets. 4. Occultation of Rohiṇī by planets. 5. Occultation of stars by the Moon. 6. Time of star-planet conjunction.

#### V. INNOVATIVE TRENDS

##### 21. Novel Innovations ... 274

1. True longitude computation on the sphere of the zodiac. 2. Computation of True Moon. 3. Simplified astronomical procedures.



#### IV. OCCULTATION

##### 16. Eclipses ... 196

1. Cause stated in the Ṛgveda. 2. Cause of the lunar eclipse. 3. Lunar eclipse: Principle of computation. 4. Lunar eclipse computation: Vāsiṣṭha and Pauliṣa. 5. —Saurasiddhānta. 6. —Āryabhaṭīya. 7. —Āryabhaṭa's Midnight system. 8. —Emendation by Brahmagupta. 9. —Bhāskara I. 10. —Lalla. 11. —Bhāskara II. 12. —Karaṇaratna. 13. —Śrīpati. 14. —Vākyakaraṇa. 15. —Grahalāghava. 16. Lunar eclipse diagram: Vāsiṣṭha Pauliṣa. 17. —Āryabhaṭa's Midnight system. 18. —Bhāskara I. 19. —Lalla. 20. —Sūryasiddhānta. 21. —Bhāskara II. 22. —Karaṇaratna. 23. Solar eclipse: Computation: Pauliṣa. 24. —Romakasiddhānta. 25. —Saurasiddhānta. 26. —Āryabhaṭa's Midnight system. 27. —Bhāskara I. 28. —Lalla. 29. —Mahāsiddhānta. 30. —Bhāskara II. 31. —Karaṇaratna. 32. —Śrīpati. 33. —Grahalāghava. 34. —Solar eclipse diagram: Romakasiddhānta. 35. —Saurasiddhānta. 36. Colour of eclipses. 37. Conditions for non-prediction of eclipses. 38. —Inscriptional references: Lunar eclipses. 38. Solar eclipses.

##### 17. Phases of the Moon ... 241

1. Periodical appearance of the Moon. 2. Moon's luminosity. 3. Conditions of Moon's visibility. 4. Preliminaries for computation. 5. Visibility corrections: Ākṣa, Āyana and the Third. 6. Rising and setting of the Moon. 7. Moon's shadow. 8. Computation of Moon's cusps. 9. Moon's cusps—diagram.

##### 18. Heliacal rising and setting of Planets and Stars ... 254

1. Heliacal rising and setting of planets. 2. Days of rising and setting. 3. Planetary elongation for rising and setting. 4. Visibility corrections. 5. Computation of rising and setting. 6. Jupiter's rising and setting. 7. Venus: Rising and setting. 8. Rising and setting of a star. 9. Canopus: Rising.

##### 19. Conjunction of Planets ... 264

1. Types of planetary conjunctions. 2. Conjunction: Principle of computation. 3. Computation of conjunction.

##### 20. Conjunction of Stars and Planets ... 271

1. Conjunction of stars and planets. 2. Principle of planet-star conjunction. 3. Occultation of stars by planets. 4. Occultation of Rohiṇī by planets. 5. Occultation of stars by the Moon. 6. Time of star-planet conjunction.

#### V. INNOVATIVE TRENDS

##### 21. Novel Innovations ... 274

1. True longitude computation on the sphere of the zodiac. 2. Computation of True Moon. 3. Simplified astronomical procedures.

#### IV. OCCULTATION

##### 16. Eclipses ... 196

1. Cause stated in the Ṛgveda. 2. Cause of the lunar eclipse. 3. Lunar eclipse: Principle of computation. 4. Lunar eclipse computation: Vāsiṣṭha and Pauliṣa. 5. —Saurasiddhānta. 6. —Āryabhaṭīya. 7. —Āryabhaṭa's Midnight system. 8. —Emendation by Brahmagupta. 9. —Bhāskara I. 10. —Lalla. 11. —Bhāskara II. 12. —Karaṇaratna. 13. —Śrīpati. 14. —Vākyakaraṇa. 15. —Grahalāghava. 16. Lunar eclipse diagram: Vāsiṣṭha Pauliṣa. 17. —Āryabhaṭa's Midnight system. 18. —Bhāskara I. 19. —Lalla. 20. —Sūryasiddhānta. 21. —Bhāskara II. 22. —Karaṇaratna. 23. Solar eclipse: Computation: Pauliṣa. 24. —Romakasiddhānta. 25. —Saurasiddhānta. 26. —Āryabhaṭa's Midnight system. 27. —Bhāskara I. 28. —Lalla. 29. —Mahāsiddhānta. 30. —Bhāskara II. 31. —Karaṇaratna. 32. —Śrīpati. 33. —Grahalāghava. 34. —Solar eclipse diagram: Romakasiddhānta. 35. —Saurasiddhānta. 36. Colour of eclipses. 37. Conditions for non-prediction of eclipses. 38. —Inscriptional references: Lunar eclipses. 38. Solar eclipses.

##### 17. Phases of the Moon ... 241

1. Periodical appearance of the Moon. 2. Moon's luminosity. 3. Conditions of Moon's visibility. 4. Preliminaries for computation. 5. Visibility corrections: Ākṣa, Āyana and the Third. 6. Rising and setting of the Moon. 7. Moon's shadow. 8. Computation of Moon's cusps. 9. Moon's cusps—diagram.

##### 18. Heliacal rising and setting of Planets and Stars ... 254

1. Heliacal rising and setting of planets. 2. Days of rising and setting. 3. Planetary elongation for rising and setting. 4. Visibility corrections. 5. Computation of rising and setting. 6. Jupiter's rising and setting. 7. Venus: Rising and setting. 8. Rising and setting of a star. 9. Canopus: Rising.

##### 19. Conjunction of Planets ... 264

1. Types of planetary conjunctions. 2. Conjunction: Principle of computation. 3. Computation of conjunction.

##### 20. Conjunction of Stars and Planets ... 271

1. Conjunction of stars and planets. 2. Principle of planet-star conjunction. 3. Occultation of stars by planets. 4. Occultation of Rohiṇi by planets. 5. Occultation of stars by the Moon. 6. Time of star-planet conjunction.

#### V. INNOVATIVE TRENDS

##### 21. Novel Innovations ... 274

1. True longitude computation on the sphere of the zodiac. 2. Computation of True Moon. 3. Simplified astronomical procedures.

#### IV. OCCULTATION

##### 16. Eclipses ... 196

1. Cause stated in the Ṛgveda. 2. Cause of the lunar eclipse. 3. Lunar eclipse: Principle of computation. 4. Lunar eclipse computation: Vāsiṣṭha and Pauliṣa. 5. —Saurasiddhānta. 6. —Āryabhaṭīya. 7. —Āryabhaṭa's Midnight system. 8. —Emendation by Brahmagupta. 9. —Bhāskara I. 10. —Lalla. 11. —Bhāskara II. 12. —Karaṇaratna. 13. —Śrīpati. 14. —Vākyakaraṇa. 15. —Grahalāghava. 16. Lunar eclipse diagram: Vāsiṣṭha Pauliṣa. 17. —Āryabhaṭa's Midnight system. 18. —Bhāskara I. 19. —Lalla. 20. —Sūryasiddhānta. 21. —Bhāskara II. 22. —Karaṇaratna. 23. Solar eclipse: Computation: Pauliṣa. 24. —Romakasiddhānta. 25. —Saurasiddhānta. 26. —Āryabhaṭa's Midnight system. 27. —Bhāskara I. 28. —Lalla. 29. —Mahāsiddhānta. 30. —Bhāskara II. 31. —Karaṇaratna. 32. —Śrīpati. 33. —Grahalāghava. 34. —Solar eclipse diagram: Romakasiddhānta. 35. —Saurasiddhānta. 36. Colour of eclipses. 37. Conditions for non-prediction of eclipses. 38. —Inscriptional references: Lunar eclipses. 38. Solar eclipses.

##### 17. Phases of the Moon ... 241

1. Periodical appearance of the Moon. 2. Moon's luminosity. 3. Conditions of Moon's visibility. 4. Preliminaries for computation. 5. Visibility corrections: Ākṣa, Āyana and the Third. 6. Rising and setting of the Moon. 7. Moon's shadow. 8. Computation of Moon's cusps. 9. Moon's cusps—diagram.

##### 18. Heliacal rising and setting of Planets and Stars ... 254

1. Heliacal rising and setting of planets. 2. Days of rising and setting. 3. Planetary elongation for rising and setting. 4. Visibility corrections. 5. Computation of rising and setting. 6. Jupiter's rising and setting. 7. Venus: Rising and setting. 8. Rising and setting of a star. 9. Canopus: Rising.

##### 19. Conjunction of Planets ... 264

1. Types of planetary conjunctions. 2. Conjunction: Principle of computation. 3. Computation of conjunction.

##### 20. Conjunction of Stars and Planets ... 271

1. Conjunction of stars and planets. 2. Principle of planet-star conjunction. 3. Occultation of stars by planets. 4. Occultation of Rohiṇi by planets. 5. Occultation of stars by the Moon. 6. Time of star-planet conjunction.

#### V. INNOVATIVE TRENDS

##### 21. Novel Innovations ... 274

1. True longitude computation on the sphere of the zodiac. 2. Computation of True Moon. 3. Simplified astronomical procedures.

#### IV. OCCULTATION

##### 16. Eclipses ... 196

1. Cause stated in the Ṛgveda. 2. Cause of the lunar eclipse. 3. Lunar eclipse: Principle of computation. 4. Lunar eclipse computation: Vāsiṣṭha and Pauliṣa. 5. —Saurasiddhānta. 6. —Āryabhaṭīya. 7. —Āryabhaṭa's Midnight system. 8. —Emendation by Brahmagupta. 9. —Bhāskara I. 10. —Lalla. 11. —Bhāskara II. 12. —Karaṇaratna. 13. —Śrīpati. 14. —Vākyakaraṇa. 15. —Grahalāghava. 16. Lunar eclipse diagram: Vāsiṣṭha Pauliṣa. 17. —Āryabhaṭa's Midnight system. 18. —Bhāskara I. 19. —Lalla. 20. —Sūryasiddhānta. 21. —Bhāskara II. 22. —Karaṇaratna. 23. Solar eclipse: Computation: Pauliṣa. 24. —Romakasiddhānta. 25. —Saurasiddhānta. 26. —Āryabhaṭa's Midnight system. 27. —Bhāskara I. 28. —Lalla. 29. —Mahāsiddhānta. 30. —Bhāskara II. 31. —Karaṇaratna. 32. —Śrīpati. 33. —Grahalāghava. 34. —Solar eclipse diagram: Romakasiddhānta. 35. —Saurasiddhānta. 36. Colour of eclipses. 37. Conditions for non-prediction of eclipses. 38. —Inscriptional references: Lunar eclipses. 38. Solar eclipses.

##### 17. Phases of the Moon ... 241

1. Periodical appearance of the Moon. 2. Moon's luminosity. 3. Conditions of Moon's visibility. 4. Preliminaries for computation. 5. Visibility corrections: Ākṣa, Āyana and the Third. 6. Rising and setting of the Moon. 7. Moon's shadow. 8. Computation of Moon's cusps. 9. Moon's cusps—diagram.

##### 18. Heliacal rising and setting of Planets and Stars ... 254

1. Heliacal rising and setting of planets. 2. Days of rising and setting. 3. Planetary elongation for rising and setting. 4. Visibility corrections. 5. Computation of rising and setting. 6. Jupiter's rising and setting. 7. Venus: Rising and setting. 8. Rising and setting of a star. 9. Canopus: Rising.

##### 19. Conjunction of Planets ... 264

1. Types of planetary conjunctions. 2. Conjunction: Principle of computation. 3. Computation of conjunction.

##### 20. Conjunction of Stars and Planets ... 271

1. Conjunction of stars and planets. 2. Principle of planet-star conjunction. 3. Occultation of stars by planets. 4. Occultation of Rohiṇī by planets. 5. Occultation of stars by the Moon. 6. Time of star-planet conjunction.

#### V. INNOVATIVE TRENDS

##### 21. Novel Innovations ... 274

1. True longitude computation on the sphere of the zodiac. 2. Computation of True Moon. 3. Simplified astronomical procedures.

#### IV. OCCULTATION

##### 16. Eclipses ... 196

1. Cause stated in the Ṛgveda. 2. Cause of the lunar eclipse. 3. Lunar eclipse: Principle of computation. 4. Lunar eclipse computation: Vāsiṣṭha and Pauliṣa. 5. —Saurasiddhānta. 6. —Āryabhaṭīya. 7. —Āryabhaṭa's Midnight system. 8. —Emendation by Brahmagupta. 9. —Bhāskara I. 10. —Lalla. 11. —Bhāskara II. 12. —Karaṇaratna. 13. —Śrīpati. 14. —Vākyakaraṇa. 15. —Grahalāghava. 16. Lunar eclipse diagram: Vāsiṣṭha Pauliṣa. 17. —Āryabhaṭa's Midnight system. 18. —Bhāskara I. 19. —Lalla. 20. —Sūryasiddhānta. 21. —Bhāskara II. 22. —Karaṇaratna. 23. Solar eclipse: Computation: Pauliṣa. 24. —Romakasiddhānta. 25. —Saurasiddhānta. 26. —Āryabhaṭa's Midnight system. 27. —Bhāskara I. 28. —Lalla. 29. —Mahāsiddhānta. 30. —Bhāskara II. 31. —Karaṇaratna. 32. —Śrīpati. 33. —Grahalāghava. 34. —Solar eclipse diagram: Romakasiddhānta. 35. —Saurasiddhānta. 36. Colour of eclipses. 37. Conditions for non-prediction of eclipses. 38. —Inscriptional references: Lunar eclipses. 38. Solar eclipses.

##### 17. Phases of the Moon ... 241

1. Periodical appearance of the Moon. 2. Moon's luminosity. 3. Conditions of Moon's visibility. 4. Preliminaries for computation. 5. Visibility corrections: Ākṣa, Āyana and the Third. 6. Rising and setting of the Moon. 7. Moon's shadow. 8. Computation of Moon's cusps. 9. Moon's cusps—diagram.

##### 18. Heliacal rising and setting of Planets and Stars ... 254

1. Heliacal rising and setting of planets. 2. Days of rising and setting. 3. Planetary elongation for rising and setting. 4. Visibility corrections. 5. Computation of rising and setting. 6. Jupiter's rising and setting. 7. Venus: Rising and setting. 8. Rising and setting of a star. 9. Canopus: Rising.

##### 19. Conjunction of Planets ... 264

1. Types of planetary conjunctions. 2. Conjunction: Principle of computation. 3. Computation of conjunction.

##### 20. Conjunction of Stars and Planets ... 271

1. Conjunction of stars and planets. 2. Principle of planet-star conjunction. 3. Occultation of stars by planets. 4. Occultation of Rohiṇī by planets. 5. Occultation of stars by the Moon. 6. Time of star-planet conjunction.

#### V. INNOVATIVE TRENDS

##### 21. Novel Innovations ... 274

1. True longitude computation on the sphere of the zodiac. 2. Computation of True Moon. 3. Simplified astronomical procedures.

#### IV. OCCULTATION

##### 16. Eclipses ... 196

1. Cause stated in the Ṛgveda. 2. Cause of the lunar eclipse. 3. Lunar eclipse: Principle of computation. 4. Lunar eclipse computation: Vāsiṣṭha and Pauliṣa. 5. —Saurasiddhānta. 6. —Āryabhaṭīya. 7. —Āryabhaṭa's Midnight system. 8. —Emendation by Brahmagupta. 9. —Bhāskara I. 10. —Lalla. 11. —Bhāskara II. 12. —Karaṇaratna. 13. —Śrīpati. 14. —Vākyakaraṇa. 15. —Grahalāghava. 16. Lunar eclipse diagram: Vāsiṣṭha Pauliṣa. 17. —Āryabhaṭa's Midnight system. 18. —Bhāskara I. 19. —Lalla. 20. —Sūryasiddhānta. 21. —Bhāskara II. 22. —Karaṇaratna. 23. Solar eclipse: Computation: Pauliṣa. 24. —Romakasiddhānta. 25. —Saurasiddhānta. 26. —Āryabhaṭa's Midnight system. 27. —Bhāskara I. 28. —Lalla. 29. —Mahāsiddhānta. 30. —Bhāskara II. 31. —Karaṇaratna. 32. —Śrīpati. 33. —Grahalāghava. 34. —Solar eclipse diagram: Romakasiddhānta. 35. —Saurasiddhānta. 36. Colour of eclipses. 37. Conditions for non-prediction of eclipses. 38. —Inscriptional references: Lunar eclipses. 38. Solar eclipses.

##### 17. Phases of the Moon ... 241

1. Periodical appearance of the Moon. 2. Moon's luminosity. 3. Conditions of Moon's visibility. 4. Preliminaries for computation. 5. Visibility corrections: Ākṣa, Āyana and the Third. 6. Rising and setting of the Moon. 7. Moon's shadow. 8. Computation of Moon's cusps. 9. Moon's cusps—diagram.

##### 18. Heliacal rising and setting of Planets and Stars ... 254

1. Heliacal rising and setting of planets. 2. Days of rising and setting. 3. Planetary elongation for rising and setting. 4. Visibility corrections. 5. Computation of rising and setting. 6. Jupiter's rising and setting. 7. Venus: Rising and setting. 8. Rising and setting of a star. 9. Canopus: Rising.

##### 19. Conjunction of Planets ... 264

1. Types of planetary conjunctions. 2. Conjunction: Principle of computation. 3. Computation of conjunction.

##### 20. Conjunction of Stars and Planets ... 271

1. Conjunction of stars and planets. 2. Principle of planet-star conjunction. 3. Occultation of stars by planets. 4. Occultation of Rohiṇī by planets. 5. Occultation of stars by the Moon. 6. Time of star-planet conjunction.

#### V. INNOVATIVE TRENDS

##### 21. Novel Innovations ... 274

1. True longitude computation on the sphere of the zodiac. 2. Computation of True Moon. 3. Simplified astronomical procedures.

#### IV. OCCULTATION

##### 16. Eclipses ... 196

1. Cause stated in the Ṛgveda. 2. Cause of the lunar eclipse. 3. Lunar eclipse: Principle of computation. 4. Lunar eclipse computation: Vāsiṣṭha and Pauliṣa. 5. —Saurasiddhānta. 6. —Āryabhaṭīya. 7. —Āryabhaṭa's Midnight system. 8. —Emendation by Brahmagupta. 9. —Bhāskara I. 10. —Lalla. 11. —Bhāskara II. 12. —Karaṇaratna. 13. —Śrīpati. 14. —Vākyakaraṇa. 15. —Grahalāghava. 16. Lunar eclipse diagram: Vāsiṣṭha Pauliṣa. 17. —Āryabhaṭa's Midnight system. 18. —Bhāskara I. 19. —Lalla. 20. —Sūryasiddhānta. 21. —Bhāskara II. 22. —Karaṇaratna. 23. Solar eclipse: Computation: Pauliṣa. 24. —Romakasiddhānta. 25. —Saurasiddhānta. 26. —Āryabhaṭa's Midnight system. 27. —Bhāskara I. 28. —Lalla. 29. —Mahāsiddhānta. 30. —Bhāskara II. 31. —Karaṇaratna. 32. —Śrīpati. 33. —Grahalāghava. 34. —Solar eclipse diagram: Romakasiddhānta. 35. —Saurasiddhānta. 36. Colour of eclipses. 37. Conditions for non-prediction of eclipses. 38. —Inscriptional references: Lunar eclipses. 38. Solar eclipses.

##### 17. Phases of the Moon ... 241

1. Periodical appearance of the Moon. 2. Moon's luminosity. 3. Conditions of Moon's visibility. 4. Preliminaries for computation. 5. Visibility corrections: Ākṣa, Āyana and the Third. 6. Rising and setting of the Moon. 7. Moon's shadow. 8. Computation of Moon's cusps. 9. Moon's cusps—diagram.

##### 18. Heliacal rising and setting of Planets and Stars ... 254

1. Heliacal rising and setting of planets. 2. Days of rising and setting. 3. Planetary elongation for rising and setting. 4. Visibility corrections. 5. Computation of rising and setting. 6. Jupiter's rising and setting. 7. Venus: Rising and setting. 8. Rising and setting of a star. 9. Canopus: Rising.

##### 19. Conjunction of Planets ... 264

1. Types of planetary conjunctions. 2. Conjunction: Principle of computation. 3. Computation of conjunction.

##### 20. Conjunction of Stars and Planets ... 271

1. Conjunction of stars and planets. 2. Principle of planet-star conjunction. 3. Occultation of stars by planets. 4. Occultation of Rohiṇī by planets. 5. Occultation of stars by the Moon. 6. Time of star-planet conjunction.

#### V. INNOVATIVE TRENDS

##### 21. Novel Innovations ... 274

1. True longitude computation on the sphere of the zodiac. 2. Computation of True Moon. 3. Simplified astronomical procedures.

#### IV. OCCULTATION

##### 16. Eclipses ... 196

1. Cause stated in the Ṛgveda. 2. Cause of the lunar eclipse. 3. Lunar eclipse: Principle of computation. 4. Lunar eclipse computation: Vāsiṣṭha and Pauliṣa. 5. —Saurasiddhānta. 6. —Āryabhaṭīya. 7. —Āryabhaṭa's Midnight system. 8. —Emendation by Brahmagupta. 9. —Bhāskara I. 10. —Lalla. 11. —Bhāskara II. 12. —Karaṇaratna. 13. —Śrīpati. 14. —Vākyakaraṇa. 15. —Grahalāghava. 16. Lunar eclipse diagram: Vāsiṣṭha Pauliṣa. 17. —Āryabhaṭa's Midnight system. 18. —Bhāskara I. 19. —Lalla. 20. —Sūryasiddhānta. 21. —Bhāskara II. 22. —Karaṇaratna. 23. Solar eclipse: Computation: Pauliṣa. 24. —Romakasiddhānta. 25. —Saurasiddhānta. 26. —Āryabhaṭa's Midnight system. 27. —Bhāskara I. 28. —Lalla. 29. —Mahāsiddhānta. 30. —Bhāskara II. 31. —Karaṇaratna. 32. —Śrīpati. 33. —Grahalāghava. 34. —Solar eclipse diagram: Romakasiddhānta. 35. —Saurasiddhānta. 36. Colour of eclipses. 37. Conditions for non-prediction of eclipses. 38. —Inscriptional references: Lunar eclipses. 38. Solar eclipses.

##### 17. Phases of the Moon ... 241

1. Periodical appearance of the Moon. 2. Moon's luminosity. 3. Conditions of Moon's visibility. 4. Preliminaries for computation. 5. Visibility corrections: Ākṣa, Āyana and the Third. 6. Rising and setting of the Moon. 7. Moon's shadow. 8. Computation of Moon's cusps. 9. Moon's cusps—diagram.

##### 18. Heliacal rising and setting of Planets and Stars ... 254

1. Heliacal rising and setting of planets. 2. Days of rising and setting. 3. Planetary elongation for rising and setting. 4. Visibility corrections. 5. Computation of rising and setting. 6. Jupiter's rising and setting. 7. Venus: Rising and setting. 8. Rising and setting of a star. 9. Canopus: Rising.

##### 19. Conjunction of Planets ... 264

1. Types of planetary conjunctions. 2. Conjunction: Principle of computation. 3. Computation of conjunction.

##### 20. Conjunction of Stars and Planets ... 271

1. Conjunction of stars and planets. 2. Principle of planet-star conjunction. 3. Occultation of stars by planets. 4. Occultation of Rohiṇī by planets. 5. Occultation of stars by the Moon. 6. Time of star-planet conjunction.

#### V. INNOVATIVE TRENDS

##### 21. Novel Innovations ... 274

1. True longitude computation on the sphere of the zodiac. 2. Computation of True Moon. 3. Simplified astronomical procedures.



#### IV. OCCULTATION

##### 16. Eclipses ... 196

1. Cause stated in the Ṛgveda. 2. Cause of the lunar eclipse. 3. Lunar eclipse: Principle of computation. 4. Lunar eclipse computation: Vāsiṣṭha and Pauliṣa. 5. —Saurasiddhānta. 6. —Āryabhaṭīya. 7. —Āryabhaṭa's Midnight system. 8. —Emendation by Brahmagupta. 9. —Bhāskara I. 10. —Lalla. 11. —Bhāskara II. 12. —Karaṇaratna. 13. —Śrīpati. 14. —Vākyakaraṇa. 15. —Grahalāghava. 16. Lunar eclipse diagram: Vāsiṣṭha Pauliṣa. 17. —Āryabhaṭa's Midnight system. 18. —Bhāskara I. 19. —Lalla. 20. —Sūryasiddhānta. 21. —Bhāskara II. 22. —Karaṇaratna. 23. Solar eclipse: Computation: Pauliṣa. 24. —Romakasiddhānta. 25. —Saurasiddhānta. 26. —Āryabhaṭa's Midnight system. 27. —Bhāskara I. 28. —Lalla. 29. —Mahāsiddhānta. 30. —Bhāskara II. 31. —Karaṇaratna. 32. —Śrīpati. 33. —Grahalāghava. 34. —Solar eclipse diagram: Romakasiddhānta. 35. —Saurasiddhānta. 36. Colour of eclipses. 37. Conditions for non-prediction of eclipses. 38. —Inscriptional references: Lunar eclipses. 38. Solar eclipses.

##### 17. Phases of the Moon ... 241

1. Periodical appearance of the Moon. 2. Moon's luminosity. 3. Conditions of Moon's visibility. 4. Preliminaries for computation. 5. Visibility corrections: Ākṣa, Āyana and the Third. 6. Rising and setting of the Moon. 7. Moon's shadow. 8. Computation of Moon's cusps. 9. Moon's cusps—diagram.

##### 18. Heliacal rising and setting of Planets and Stars ... 254

1. Heliacal rising and setting of planets. 2. Days of rising and setting. 3. Planetary elongation for rising and setting. 4. Visibility corrections. 5. Computation of rising and setting. 6. Jupiter's rising and setting. 7. Venus: Rising and setting. 8. Rising and setting of a star. 9. Canopus: Rising.

##### 19. Conjunction of Planets ... 264

1. Types of planetary conjunctions. 2. Conjunction: Principle of computation. 3. Computation of conjunction.

##### 20. Conjunction of Stars and Planets ... 271

1. Conjunction of stars and planets. 2. Principle of planet-star conjunction. 3. Occultation of stars by planets. 4. Occultation of Rohiṇī by planets. 5. Occultation of stars by the Moon. 6. Time of star-planet conjunction.

#### V. INNOVATIVE TRENDS

##### 21. Novel Innovations ... 274

1. True longitude computation on the sphere of the zodiac. 2. Computation of True Moon. 3. Simplified astronomical procedures.

#### IV. OCCULTATION

##### 16. Eclipses ... 196

1. Cause stated in the Ṛgveda. 2. Cause of the lunar eclipse. 3. Lunar eclipse: Principle of computation. 4. Lunar eclipse computation: Vāsiṣṭha and Pauliṣa. 5. —Saurasiddhānta. 6. —Āryabhaṭīya. 7. —Āryabhaṭa's Midnight system. 8. —Emendation by Brahmagupta. 9. —Bhāskara I. 10. —Lalla. 11. —Bhāskara II. 12. —Karaṇaratna. 13. —Śrīpati. 14. —Vākyakaraṇa. 15. —Grahalāghava. 16. Lunar eclipse diagram: Vāsiṣṭha Pauliṣa. 17. —Āryabhaṭa's Midnight system. 18. —Bhāskara I. 19. —Lalla. 20. —Sūryasiddhānta. 21. —Bhāskara II. 22. —Karaṇaratna. 23. Solar eclipse: Computation: Pauliṣa. 24. —Romakasiddhānta. 25. —Saurasiddhānta. 26. —Āryabhaṭa's Midnight system. 27. —Bhāskara I. 28. —Lalla. 29. —Mahāsiddhānta. 30. —Bhāskara II. 31. —Karaṇaratna. 32. —Śrīpati. 33. —Grahalāghava. 34. —Solar eclipse diagram: Romakasiddhānta. 35. —Saurasiddhānta. 36. Colour of eclipses. 37. Conditions for non-prediction of eclipses. 38. —Inscriptional references: Lunar eclipses. 38. Solar eclipses.

##### 17. Phases of the Moon ... 241

1. Periodical appearance of the Moon. 2. Moon's luminosity. 3. Conditions of Moon's visibility. 4. Preliminaries for computation. 5. Visibility corrections: Ākṣa, Āyana and the Third. 6. Rising and setting of the Moon. 7. Moon's shadow. 8. Computation of Moon's cusps. 9. Moon's cusps—diagram.

##### 18. Heliacal rising and setting of Planets and Stars ... 254

1. Heliacal rising and setting of planets. 2. Days of rising and setting. 3. Planetary elongation for rising and setting. 4. Visibility corrections. 5. Computation of rising and setting. 6. Jupiter's rising and setting. 7. Venus: Rising and setting. 8. Rising and setting of a star. 9. Canopus: Rising.

##### 19. Conjunction of Planets ... 264

1. Types of planetary conjunctions. 2. Conjunction: Principle of computation. 3. Computation of conjunction.

##### 20. Conjunction of Stars and Planets ... 271

1. Conjunction of stars and planets. 2. Principle of planet-star conjunction. 3. Occultation of stars by planets. 4. Occultation of Rohiṇī by planets. 5. Occultation of stars by the Moon. 6. Time of star-planet conjunction.

#### V. INNOVATIVE TRENDS

##### 21. Novel Innovations ... 274

1. True longitude computation on the sphere of the zodiac. 2. Computation of True Moon. 3. Simplified astronomical procedures.

#### IV. OCCULTATION

##### 16. Eclipses ... 196

1. Cause stated in the Ṛgveda. 2. Cause of the lunar eclipse. 3. Lunar eclipse: Principle of computation. 4. Lunar eclipse computation: Vāsiṣṭha and Pauliṣa. 5. —Saurasiddhānta. 6. —Āryabhaṭīya. 7. —Āryabhaṭa's Midnight system. 8. —Emendation by Brahmagupta. 9. —Bhāskara I. 10. —Lalla. 11. —Bhāskara II. 12. —Karaṇaratna. 13. —Śrīpati. 14. —Vākyakaraṇa. 15. —Grahalāghava. 16. Lunar eclipse diagram: Vāsiṣṭha Pauliṣa. 17. —Āryabhaṭa's Midnight system. 18. —Bhāskara I. 19. —Lalla. 20. —Sūryasiddhānta. 21. —Bhāskara II. 22. —Karaṇaratna. 23. Solar eclipse: Computation: Pauliṣa. 24. —Romakasiddhānta. 25. —Saurasiddhānta. 26. —Āryabhaṭa's Midnight system. 27. —Bhāskara I. 28. —Lalla. 29. —Mahāsiddhānta. 30. —Bhāskara II. 31. —Karaṇaratna. 32. —Śrīpati. 33. —Grahalāghava. 34. —Solar eclipse diagram: Romakasiddhānta. 35. —Saurasiddhānta. 36. Colour of eclipses. 37. Conditions for non-prediction of eclipses. 38. —Inscriptional references: Lunar eclipses. 38. Solar eclipses.

##### 17. Phases of the Moon ... 241

1. Periodical appearance of the Moon. 2. Moon's luminosity. 3. Conditions of Moon's visibility. 4. Preliminaries for computation. 5. Visibility corrections: Ākṣa, Āyana and the Third. 6. Rising and setting of the Moon. 7. Moon's shadow. 8. Computation of Moon's cusps. 9. Moon's cusps—diagram.

##### 18. Heliacal rising and setting of Planets and Stars ... 254

1. Heliacal rising and setting of planets. 2. Days of rising and setting. 3. Planetary elongation for rising and setting. 4. Visibility corrections. 5. Computation of rising and setting. 6. Jupiter's rising and setting. 7. Venus: Rising and setting. 8. Rising and setting of a star. 9. Canopus: Rising.

##### 19. Conjunction of Planets ... 264

1. Types of planetary conjunctions. 2. Conjunction: Principle of computation. 3. Computation of conjunction.

##### 20. Conjunction of Stars and Planets ... 271

1. Conjunction of stars and planets. 2. Principle of planet-star conjunction. 3. Occultation of stars by planets. 4. Occultation of Rohiṇī by planets. 5. Occultation of stars by the Moon. 6. Time of star-planet conjunction.

#### V. INNOVATIVE TRENDS

##### 21. Novel Innovations ... 274

1. True longitude computation on the sphere of the zodiac. 2. Computation of True Moon. 3. Simplified astronomical procedures.

#### IV. OCCULTATION

##### 16. Eclipses ... 196

1. Cause stated in the Ṛgveda. 2. Cause of the lunar eclipse. 3. Lunar eclipse: Principle of computation. 4. Lunar eclipse computation: Vāsiṣṭha and Pauliṣa. 5. —Saurasiddhānta. 6. —Āryabhaṭīya. 7. —Āryabhaṭa's Midnight system. 8. —Emendation by Brahmagupta. 9. —Bhāskara I. 10. —Lalla. 11. —Bhāskara II. 12. —Karaṇaratna. 13. —Śrīpati. 14. —Vākyakaraṇa. 15. —Grahalāghava. 16. Lunar eclipse diagram: Vāsiṣṭha Pauliṣa. 17. —Āryabhaṭa's Midnight system. 18. —Bhāskara I. 19. —Lalla. 20. —Sūryasiddhānta. 21. —Bhāskara II. 22. —Karaṇaratna. 23. Solar eclipse: Computation: Pauliṣa. 24. —Romakasiddhānta. 25. —Saurasiddhānta. 26. —Āryabhaṭa's Midnight system. 27. —Bhāskara I. 28. —Lalla. 29. —Mahāsiddhānta. 30. —Bhāskara II. 31. —Karaṇaratna. 32. —Śrīpati. 33. —Grahalāghava. 34. —Solar eclipse diagram: Romakasiddhānta. 35. —Saurasiddhānta. 36. Colour of eclipses. 37. Conditions for non-prediction of eclipses. 38. —Inscriptional references: Lunar eclipses. 38. Solar eclipses.

##### 17. Phases of the Moon ... 241

1. Periodical appearance of the Moon. 2. Moon's luminosity. 3. Conditions of Moon's visibility. 4. Preliminaries for computation. 5. Visibility corrections: Ākṣa, Āyana and the Third. 6. Rising and setting of the Moon. 7. Moon's shadow. 8. Computation of Moon's cusps. 9. Moon's cusps—diagram.

##### 18. Heliacal rising and setting of Planets and Stars ... 254

1. Heliacal rising and setting of planets. 2. Days of rising and setting. 3. Planetary elongation for rising and setting. 4. Visibility corrections. 5. Computation of rising and setting. 6. Jupiter's rising and setting. 7. Venus: Rising and setting. 8. Rising and setting of a star. 9. Canopus: Rising.

##### 19. Conjunction of Planets ... 264

1. Types of planetary conjunctions. 2. Conjunction: Principle of computation. 3. Computation of conjunction.

##### 20. Conjunction of Stars and Planets ... 271

1. Conjunction of stars and planets. 2. Principle of planet-star conjunction. 3. Occultation of stars by planets. 4. Occultation of Rohiṇī by planets. 5. Occultation of stars by the Moon. 6. Time of star-planet conjunction.

#### V. INNOVATIVE TRENDS

##### 21. Novel Innovations ... 274

1. True longitude computation on the sphere of the zodiac. 2. Computation of True Moon. 3. Simplified astronomical procedures.

#### IV. OCCULTATION

##### 16. Eclipses ... 196

1. Cause stated in the Ṛgveda. 2. Cause of the lunar eclipse. 3. Lunar eclipse: Principle of computation. 4. Lunar eclipse computation: Vāsiṣṭha and Pauliṣa. 5. —Saurasiddhānta. 6. —Āryabhaṭīya. 7. —Āryabhaṭa's Midnight system. 8. —Emendation by Brahmagupta. 9. —Bhāskara I. 10. —Lalla. 11. —Bhāskara II. 12. —Karaṇaratna. 13. —Śrīpati. 14. —Vākyakaraṇa. 15. —Grahalāghava. 16. Lunar eclipse diagram: Vāsiṣṭha Pauliṣa. 17. —Āryabhaṭa's Midnight system. 18. —Bhāskara I. 19. —Lalla. 20. —Sūryasiddhānta. 21. —Bhāskara II. 22. —Karaṇaratna. 23. Solar eclipse: Computation: Pauliṣa. 24. —Romakasiddhānta. 25. —Saurasiddhānta. 26. —Āryabhaṭa's Midnight system. 27. —Bhāskara I. 28. —Lalla. 29. —Mahāsiddhānta. 30. —Bhāskara II. 31. —Karaṇaratna. 32. —Śrīpati. 33. —Grahalāghava. 34. —Solar eclipse diagram: Romakasiddhānta. 35. —Saurasiddhānta. 36. Colour of eclipses. 37. Conditions for non-prediction of eclipses. 38. —Inscriptional references: Lunar eclipses. 38. Solar eclipses.

##### 17. Phases of the Moon ... 241

1. Periodical appearance of the Moon. 2. Moon's luminosity. 3. Conditions of Moon's visibility. 4. Preliminaries for computation. 5. Visibility corrections: Ākṣa, Āyana and the Third. 6. Rising and setting of the Moon. 7. Moon's shadow. 8. Computation of Moon's cusps. 9. Moon's cusps—diagram.

##### 18. Heliacal rising and setting of Planets and Stars ... 254

1. Heliacal rising and setting of planets. 2. Days of rising and setting. 3. Planetary elongation for rising and setting. 4. Visibility corrections. 5. Computation of rising and setting. 6. Jupiter's rising and setting. 7. Venus: Rising and setting. 8. Rising and setting of a star. 9. Canopus: Rising.

##### 19. Conjunction of Planets ... 264

1. Types of planetary conjunctions. 2. Conjunction: Principle of computation. 3. Computation of conjunction.

##### 20. Conjunction of Stars and Planets ... 271

1. Conjunction of stars and planets. 2. Principle of planet-star conjunction. 3. Occultation of stars by planets. 4. Occultation of Rohiṇī by planets. 5. Occultation of stars by the Moon. 6. Time of star-planet conjunction.

#### V. INNOVATIVE TRENDS

##### 21. Novel Innovations ... 274

1. True longitude computation on the sphere of the zodiac. 2. Computation of True Moon. 3. Simplified astronomical procedures.

#### IV. OCCULTATION

##### 16. Eclipses ... 196

1. Cause stated in the Ṛgveda. 2. Cause of the lunar eclipse. 3. Lunar eclipse: Principle of computation. 4. Lunar eclipse computation: Vāsiṣṭha and Pauliṣa. 5. —Saurasiddhānta. 6. —Āryabhaṭīya. 7. —Āryabhaṭa's Midnight system. 8. —Emendation by Brahmagupta. 9. —Bhāskara I. 10. —Lalla. 11. —Bhāskara II. 12. —Karaṇaratna. 13. —Śrīpati. 14. —Vākyakaraṇa. 15. —Grahalāghava. 16. Lunar eclipse diagram: Vāsiṣṭha Pauliṣa. 17. —Āryabhaṭa's Midnight system. 18. —Bhāskara I. 19. —Lalla. 20. —Sūryasiddhānta. 21. —Bhāskara II. 22. —Karaṇaratna. 23. Solar eclipse: Computation: Pauliṣa. 24. —Romakasiddhānta. 25. —Saurasiddhānta. 26. —Āryabhaṭa's Midnight system. 27. —Bhāskara I. 28. —Lalla. 29. —Mahāsiddhānta. 30. —Bhāskara II. 31. —Karaṇaratna. 32. —Śrīpati. 33. —Grahalāghava. 34. —Solar eclipse diagram: Romakasiddhānta. 35. —Saurasiddhānta. 36. Colour of eclipses. 37. Conditions for non-prediction of eclipses. 38. —Inscriptional references: Lunar eclipses. 38. Solar eclipses.

##### 17. Phases of the Moon ... 241

1. Periodical appearance of the Moon. 2. Moon's luminosity. 3. Conditions of Moon's visibility. 4. Preliminaries for computation. 5. Visibility corrections: Ākṣa, Āyana and the Third. 6. Rising and setting of the Moon. 7. Moon's shadow. 8. Computation of Moon's cusps. 9. Moon's cusps—diagram.

##### 18. Heliacal rising and setting of Planets and Stars ... 254

1. Heliacal rising and setting of planets. 2. Days of rising and setting. 3. Planetary elongation for rising and setting. 4. Visibility corrections. 5. Computation of rising and setting. 6. Jupiter's rising and setting. 7. Venus: Rising and setting. 8. Rising and setting of a star. 9. Canopus: Rising.

##### 19. Conjunction of Planets ... 264

1. Types of planetary conjunctions. 2. Conjunction: Principle of computation. 3. Computation of conjunction.

##### 20. Conjunction of Stars and Planets ... 271

1. Conjunction of stars and planets. 2. Principle of planet-star conjunction. 3. Occultation of stars by planets. 4. Occultation of Rohiṇī by planets. 5. Occultation of stars by the Moon. 6. Time of star-planet conjunction.

#### V. INNOVATIVE TRENDS

##### 21. Novel Innovations ... 274

1. True longitude computation on the sphere of the zodiac. 2. Computation of True Moon. 3. Simplified astronomical procedures.

#### IV. OCCULTATION

##### 16. Eclipses ... 196

1. Cause stated in the Ṛgveda. 2. Cause of the lunar eclipse. 3. Lunar eclipse: Principle of computation. 4. Lunar eclipse computation: Vāsiṣṭha and Pauliṣa. 5. —Saurasiddhānta. 6. —Āryabhaṭīya. 7. —Āryabhaṭa's Midnight system. 8. —Emendation by Brahmagupta. 9. —Bhāskara I. 10. —Lalla. 11. —Bhāskara II. 12. —Karaṇaratna. 13. —Śrīpati. 14. —Vākyakaraṇa. 15. —Grahalāghava. 16. Lunar eclipse diagram: Vāsiṣṭha Pauliṣa. 17. —Āryabhaṭa's Midnight system. 18. —Bhāskara I. 19. —Lalla. 20. —Sūryasiddhānta. 21. —Bhāskara II. 22. —Karaṇaratna. 23. Solar eclipse: Computation: Pauliṣa. 24. —Romakasiddhānta. 25. —Saurasiddhānta. 26. —Āryabhaṭa's Midnight system. 27. —Bhāskara I. 28. —Lalla. 29. —Mahāsiddhānta. 30. —Bhāskara II. 31. —Karaṇaratna. 32. —Śrīpati. 33. —Grahalāghava. 34. —Solar eclipse diagram: Romakasiddhānta. 35. —Saurasiddhānta. 36. Colour of eclipses. 37. Conditions for non-prediction of eclipses. 38. —Inscriptional references: Lunar eclipses. 38. Solar eclipses.

##### 17. Phases of the Moon ... 241

1. Periodical appearance of the Moon. 2. Moon's luminosity. 3. Conditions of Moon's visibility. 4. Preliminaries for computation. 5. Visibility corrections: Ākṣa, Āyana and the Third. 6. Rising and setting of the Moon. 7. Moon's shadow. 8. Computation of Moon's cusps. 9. Moon's cusps—diagram.

##### 18. Heliacal rising and setting of Planets and Stars ... 254

1. Heliacal rising and setting of planets. 2. Days of rising and setting. 3. Planetary elongation for rising and setting. 4. Visibility corrections. 5. Computation of rising and setting. 6. Jupiter's rising and setting. 7. Venus: Rising and setting. 8. Rising and setting of a star. 9. Canopus: Rising.

##### 19. Conjunction of Planets ... 264

1. Types of planetary conjunctions. 2. Conjunction: Principle of computation. 3. Computation of conjunction.

##### 20. Conjunction of Stars and Planets ... 271

1. Conjunction of stars and planets. 2. Principle of planet-star conjunction. 3. Occultation of stars by planets. 4. Occultation of Rohiṇī by planets. 5. Occultation of stars by the Moon. 6. Time of star-planet conjunction.

#### V. INNOVATIVE TRENDS

##### 21. Novel Innovations ... 274

1. True longitude computation on the sphere of the zodiac. 2. Computation of True Moon. 3. Simplified astronomical procedures.

#### IV. OCCULTATION

##### 16. Eclipses ... 196

1. Cause stated in the Ṛgveda. 2. Cause of the lunar eclipse. 3. Lunar eclipse: Principle of computation. 4. Lunar eclipse computation: Vāsiṣṭha and Pauliṣa. 5. —Saurasiddhānta. 6. —Āryabhaṭīya. 7. —Āryabhaṭa's Midnight system. 8. —Emendation by Brahmagupta. 9. —Bhāskara I. 10. —Lalla. 11. —Bhāskara II. 12. —Karaṇaratna. 13. —Śrīpati. 14. —Vākyakaraṇa. 15. —Grahalāghava. 16. Lunar eclipse diagram: Vāsiṣṭha Pauliṣa. 17. —Āryabhaṭa's Midnight system. 18. —Bhāskara I. 19. —Lalla. 20. —Sūryasiddhānta. 21. —Bhāskara II. 22. —Karaṇaratna. 23. Solar eclipse: Computation: Pauliṣa. 24. —Romakasiddhānta. 25. —Saurasiddhānta. 26. —Āryabhaṭa's Midnight system. 27. —Bhāskara I. 28. —Lalla. 29. —Mahāsiddhānta. 30. —Bhāskara II. 31. —Karaṇaratna. 32. —Śrīpati. 33. —Grahalāghava. 34. —Solar eclipse diagram: Romakasiddhānta. 35. —Saurasiddhānta. 36. Colour of eclipses. 37. Conditions for non-prediction of eclipses. 38. —Inscriptional references: Lunar eclipses. 38. Solar eclipses.

##### 17. Phases of the Moon ... 241

1. Periodical appearance of the Moon. 2. Moon's luminosity. 3. Conditions of Moon's visibility. 4. Preliminaries for computation. 5. Visibility corrections: Ākṣa, Āyana and the Third. 6. Rising and setting of the Moon. 7. Moon's shadow. 8. Computation of Moon's cusps. 9. Moon's cusps—diagram.

##### 18. Heliacal rising and setting of Planets and Stars ... 254

1. Heliacal rising and setting of planets. 2. Days of rising and setting. 3. Planetary elongation for rising and setting. 4. Visibility corrections. 5. Computation of rising and setting. 6. Jupiter's rising and setting. 7. Venus: Rising and setting. 8. Rising and setting of a star. 9. Canopus: Rising.

##### 19. Conjunction of Planets ... 264

1. Types of planetary conjunctions. 2. Conjunction: Principle of computation. 3. Computation of conjunction.

##### 20. Conjunction of Stars and Planets ... 271

1. Conjunction of stars and planets. 2. Principle of planet-star conjunction. 3. Occultation of stars by planets. 4. Occultation of Rohiṇī by planets. 5. Occultation of stars by the Moon. 6. Time of star-planet conjunction.

#### V. INNOVATIVE TRENDS

##### 21. Novel Innovations ... 274

1. True longitude computation on the sphere of the zodiac. 2. Computation of True Moon. 3. Simplified astronomical procedures.



#### IV. OCCULTATION

##### 16. Eclipses ... 196

1. Cause stated in the Ṛgveda. 2. Cause of the lunar eclipse. 3. Lunar eclipse: Principle of computation. 4. Lunar eclipse computation: Vāsiṣṭha and Pauliṣa. 5. —Saurasiddhānta. 6. —Āryabhaṭīya. 7. —Āryabhaṭa's Midnight system. 8. —Emendation by Brahmagupta. 9. —Bhāskara I. 10. —Lalla. 11. —Bhāskara II. 12. —Karaṇaratna. 13. —Śrīpati. 14. —Vākyakaraṇa. 15. —Grahalāghava. 16. Lunar eclipse diagram: Vāsiṣṭha Pauliṣa. 17. —Āryabhaṭa's Midnight system. 18. —Bhāskara I. 19. —Lalla. 20. —Sūryasiddhānta. 21. —Bhāskara II. 22. —Karaṇaratna. 23. Solar eclipse: Computation: Pauliṣa. 24. —Romakasiddhānta. 25. —Saurasiddhānta. 26. —Āryabhaṭa's Midnight system. 27. —Bhāskara I. 28. —Lalla. 29. —Mahāsiddhānta. 30. —Bhāskara II. 31. —Karaṇaratna. 32. —Śrīpati. 33. —Grahalāghava. 34. —Solar eclipse diagram: Romakasiddhānta. 35. —Saurasiddhānta. 36. Colour of eclipses. 37. Conditions for non-prediction of eclipses. 38. —Inscriptional references: Lunar eclipses. 38. Solar eclipses.

##### 17. Phases of the Moon ... 241

1. Periodical appearance of the Moon. 2. Moon's luminosity. 3. Conditions of Moon's visibility. 4. Preliminaries for computation. 5. Visibility corrections: Ākṣa, Āyana and the Third. 6. Rising and setting of the Moon. 7. Moon's shadow. 8. Computation of Moon's cusps. 9. Moon's cusps—diagram.

##### 18. Heliacal rising and setting of Planets and Stars ... 254

1. Heliacal rising and setting of planets. 2. Days of rising and setting. 3. Planetary elongation for rising and setting. 4. Visibility corrections. 5. Computation of rising and setting. 6. Jupiter's rising and setting. 7. Venus: Rising and setting. 8. Rising and setting of a star. 9. Canopus: Rising.

##### 19. Conjunction of Planets ... 264

1. Types of planetary conjunctions. 2. Conjunction: Principle of computation. 3. Computation of conjunction.

##### 20. Conjunction of Stars and Planets ... 271

1. Conjunction of stars and planets. 2. Principle of planet-star conjunction. 3. Occultation of stars by planets. 4. Occultation of Rohiṇī by planets. 5. Occultation of stars by the Moon. 6. Time of star-planet conjunction.

#### V. INNOVATIVE TRENDS

##### 21. Novel Innovations ... 274

1. True longitude computation on the sphere of the zodiac. 2. Computation of True Moon. 3. Simplified astronomical procedures.

#### IV. OCCULTATION

##### 16. Eclipses ... 196

1. Cause stated in the Ṛgveda. 2. Cause of the lunar eclipse. 3. Lunar eclipse: Principle of computation. 4. Lunar eclipse computation: Vāsiṣṭha and Pauliṣa. 5. —Saurasiddhānta. 6. —Āryabhaṭīya. 7. —Āryabhaṭa's Midnight system. 8. —Emendation by Brahmagupta. 9. —Bhāskara I. 10. —Lalla. 11. —Bhāskara II. 12. —Karaṇaratna. 13. —Śrīpati. 14. —Vākyakaraṇa. 15. —Grahalāghava. 16. Lunar eclipse diagram: Vāsiṣṭha Pauliṣa. 17. —Āryabhaṭa's Midnight system. 18. —Bhāskara I. 19. —Lalla. 20. —Sūryasiddhānta. 21. —Bhāskara II. 22. —Karaṇaratna. 23. Solar eclipse: Computation: Pauliṣa. 24. —Romakasiddhānta. 25. —Saurasiddhānta. 26. —Āryabhaṭa's Midnight system. 27. —Bhāskara I. 28. —Lalla. 29. —Mahāsiddhānta. 30. —Bhāskara II. 31. —Karaṇaratna. 32. —Śrīpati. 33. —Grahalāghava. 34. —Solar eclipse diagram: Romakasiddhānta. 35. —Saurasiddhānta. 36. Colour of eclipses. 37. Conditions for non-prediction of eclipses. 38. —Inscriptional references: Lunar eclipses. 38. Solar eclipses.

##### 17. Phases of the Moon ... 241

1. Periodical appearance of the Moon. 2. Moon's luminosity. 3. Conditions of Moon's visibility. 4. Preliminaries for computation. 5. Visibility corrections: Ākṣa, Āyana and the Third. 6. Rising and setting of the Moon. 7. Moon's shadow. 8. Computation of Moon's cusps. 9. Moon's cusps—diagram.

##### 18. Heliacal rising and setting of Planets and Stars ... 254

1. Heliacal rising and setting of planets. 2. Days of rising and setting. 3. Planetary elongation for rising and setting. 4. Visibility corrections. 5. Computation of rising and setting. 6. Jupiter's rising and setting. 7. Venus: Rising and setting. 8. Rising and setting of a star. 9. Canopus: Rising.

##### 19. Conjunction of Planets ... 264

1. Types of planetary conjunctions. 2. Conjunction: Principle of computation. 3. Computation of conjunction.

##### 20. Conjunction of Stars and Planets ... 271

1. Conjunction of stars and planets. 2. Principle of planet-star conjunction. 3. Occultation of stars by planets. 4. Occultation of Rohiṇī by planets. 5. Occultation of stars by the Moon. 6. Time of star-planet conjunction.

#### V. INNOVATIVE TRENDS

##### 21. Novel Innovations ... 274

1. True longitude computation on the sphere of the zodiac. 2. Computation of True Moon. 3. Simplified astronomical procedures.

#### IV. OCCULTATION

##### 16. Eclipses ... 196

1. Cause stated in the Ṛgveda. 2. Cause of the lunar eclipse. 3. Lunar eclipse: Principle of computation. 4. Lunar eclipse computation: Vāsiṣṭha and Pauliṣa. 5. —Saurasiddhānta. 6. —Āryabhaṭīya. 7. —Āryabhaṭa's Midnight system. 8. —Emendation by Brahmagupta. 9. —Bhāskara I. 10. —Lalla. 11. —Bhāskara II. 12. —Karaṇaratna. 13. —Śrīpati. 14. —Vākyakaraṇa. 15. —Grahalāghava. 16. Lunar eclipse diagram: Vāsiṣṭha Pauliṣa. 17. —Āryabhaṭa's Midnight system. 18. —Bhāskara I. 19. —Lalla. 20. —Sūryasiddhānta. 21. —Bhāskara II. 22. —Karaṇaratna. 23. Solar eclipse: Computation: Pauliṣa. 24. —Romakasiddhānta. 25. —Saurasiddhānta. 26. —Āryabhaṭa's Midnight system. 27. —Bhāskara I. 28. —Lalla. 29. —Mahāsiddhānta. 30. —Bhāskara II. 31. —Karaṇaratna. 32. —Śrīpati. 33. —Grahalāghava. 34. —Solar eclipse diagram: Romakasiddhānta. 35. —Saurasiddhānta. 36. Colour of eclipses. 37. Conditions for non-prediction of eclipses. 38. —Inscriptional references: Lunar eclipses. 38. Solar eclipses.

##### 17. Phases of the Moon ... 241

1. Periodical appearance of the Moon. 2. Moon's luminosity. 3. Conditions of Moon's visibility. 4. Preliminaries for computation. 5. Visibility corrections: Ākṣa, Āyana and the Third. 6. Rising and setting of the Moon. 7. Moon's shadow. 8. Computation of Moon's cusps. 9. Moon's cusps—diagram.

##### 18. Heliacal rising and setting of Planets and Stars ... 254

1. Heliacal rising and setting of planets. 2. Days of rising and setting. 3. Planetary elongation for rising and setting. 4. Visibility corrections. 5. Computation of rising and setting. 6. Jupiter's rising and setting. 7. Venus: Rising and setting. 8. Rising and setting of a star. 9. Canopus: Rising.

##### 19. Conjunction of Planets ... 264

1. Types of planetary conjunctions. 2. Conjunction: Principle of computation. 3. Computation of conjunction.

##### 20. Conjunction of Stars and Planets ... 271

1. Conjunction of stars and planets. 2. Principle of planet-star conjunction. 3. Occultation of stars by planets. 4. Occultation of Rohiṇī by planets. 5. Occultation of stars by the Moon. 6. Time of star-planet conjunction.

#### V. INNOVATIVE TRENDS

##### 21. Novel Innovations ... 274

1. True longitude computation on the sphere of the zodiac. 2. Computation of True Moon. 3. Simplified astronomical procedures.

#### IV. OCCULTATION

##### 16. Eclipses ... 196

1. Cause stated in the Ṛgveda. 2. Cause of the lunar eclipse. 3. Lunar eclipse: Principle of computation. 4. Lunar eclipse computation: Vāsiṣṭha and Pauliṣa. 5. —Saurasiddhānta. 6. —Āryabhaṭīya. 7. —Āryabhaṭa's Midnight system. 8. —Emendation by Brahmagupta. 9. —Bhāskara I. 10. —Lalla. 11. —Bhāskara II. 12. —Karaṇaratna. 13. —Śrīpati. 14. —Vākyakaraṇa. 15. —Grahalāghava. 16. Lunar eclipse diagram: Vāsiṣṭha Pauliṣa. 17. —Āryabhaṭa's Midnight system. 18. —Bhāskara I. 19. —Lalla. 20. —Sūryasiddhānta. 21. —Bhāskara II. 22. —Karaṇaratna. 23. Solar eclipse: Computation: Pauliṣa. 24. —Romakasiddhānta. 25. —Saurasiddhānta. 26. —Āryabhaṭa's Midnight system. 27. —Bhāskara I. 28. —Lalla. 29. —Mahāsiddhānta. 30. —Bhāskara II. 31. —Karaṇaratna. 32. —Śrīpati. 33. —Grahalāghava. 34. —Solar eclipse diagram: Romakasiddhānta. 35. —Saurasiddhānta. 36. Colour of eclipses. 37. Conditions for non-prediction of eclipses. 38. —Inscriptional references: Lunar eclipses. 38. Solar eclipses.

##### 17. Phases of the Moon ... 241

1. Periodical appearance of the Moon. 2. Moon's luminosity. 3. Conditions of Moon's visibility. 4. Preliminaries for computation. 5. Visibility corrections: Ākṣa, Āyana and the Third. 6. Rising and setting of the Moon. 7. Moon's shadow. 8. Computation of Moon's cusps. 9. Moon's cusps—diagram.

##### 18. Heliacal rising and setting of Planets and Stars ... 254

1. Heliacal rising and setting of planets. 2. Days of rising and setting. 3. Planetary elongation for rising and setting. 4. Visibility corrections. 5. Computation of rising and setting. 6. Jupiter's rising and setting. 7. Venus: Rising and setting. 8. Rising and setting of a star. 9. Canopus: Rising.

##### 19. Conjunction of Planets ... 264

1. Types of planetary conjunctions. 2. Conjunction: Principle of computation. 3. Computation of conjunction.

##### 20. Conjunction of Stars and Planets ... 271

1. Conjunction of stars and planets. 2. Principle of planet-star conjunction. 3. Occultation of stars by planets. 4. Occultation of Rohiṇī by planets. 5. Occultation of stars by the Moon. 6. Time of star-planet conjunction.

#### V. INNOVATIVE TRENDS

##### 21. Novel Innovations ... 274

1. True longitude computation on the sphere of the zodiac. 2. Computation of True Moon. 3. Simplified astronomical procedures.

#### IV. OCCULTATION

##### 16. Eclipses ... 196

1. Cause stated in the Ṛgveda. 2. Cause of the lunar eclipse. 3. Lunar eclipse: Principle of computation. 4. Lunar eclipse computation: Vāsiṣṭha and Pauliṣa. 5. —Saurasiddhānta. 6. —Āryabhaṭīya. 7. —Āryabhaṭa's Midnight system. 8. —Emendation by Brahmagupta. 9. —Bhāskara I. 10. —Lalla. 11. —Bhāskara II. 12. —Karaṇaratna. 13. —Śrīpati. 14. —Vākyakaraṇa. 15. —Grahalāghava. 16. Lunar eclipse diagram: Vāsiṣṭha Pauliṣa. 17. —Āryabhaṭa's Midnight system. 18. —Bhāskara I. 19. —Lalla. 20. —Sūryasiddhānta. 21. —Bhāskara II. 22. —Karaṇaratna. 23. Solar eclipse: Computation: Pauliṣa. 24. —Romakasiddhānta. 25. —Saurasiddhānta. 26. —Āryabhaṭa's Midnight system. 27. —Bhāskara I. 28. —Lalla. 29. —Mahāsiddhānta. 30. —Bhāskara II. 31. —Karaṇaratna. 32. —Śrīpati. 33. —Grahalāghava. 34. —Solar eclipse diagram: Romakasiddhānta. 35. —Saurasiddhānta. 36. Colour of eclipses. 37. Conditions for non-prediction of eclipses. 38. —Inscriptional references: Lunar eclipses. 38. Solar eclipses.

##### 17. Phases of the Moon ... 241

1. Periodical appearance of the Moon. 2. Moon's luminosity. 3. Conditions of Moon's visibility. 4. Preliminaries for computation. 5. Visibility corrections: Ākṣa, Āyana and the Third. 6. Rising and setting of the Moon. 7. Moon's shadow. 8. Computation of Moon's cusps. 9. Moon's cusps—diagram.

##### 18. Heliacal rising and setting of Planets and Stars ... 254

1. Heliacal rising and setting of planets. 2. Days of rising and setting. 3. Planetary elongation for rising and setting. 4. Visibility corrections. 5. Computation of rising and setting. 6. Jupiter's rising and setting. 7. Venus: Rising and setting. 8. Rising and setting of a star. 9. Canopus: Rising.

##### 19. Conjunction of Planets ... 264

1. Types of planetary conjunctions. 2. Conjunction: Principle of computation. 3. Computation of conjunction.

##### 20. Conjunction of Stars and Planets ... 271

1. Conjunction of stars and planets. 2. Principle of planet-star conjunction. 3. Occultation of stars by planets. 4. Occultation of Rohiṇī by planets. 5. Occultation of stars by the Moon. 6. Time of star-planet conjunction.

#### V. INNOVATIVE TRENDS

##### 21. Novel Innovations ... 274

1. True longitude computation on the sphere of the zodiac. 2. Computation of True Moon. 3. Simplified astronomical procedures.

#### IV. OCCULTATION

##### 16. Eclipses ... 196

1. Cause stated in the Ṛgveda. 2. Cause of the lunar eclipse. 3. Lunar eclipse: Principle of computation. 4. Lunar eclipse computation: Vāsiṣṭha and Pauliṣa. 5. —Saurasiddhānta. 6. —Āryabhaṭīya. 7. —Āryabhaṭa's Midnight system. 8. —Emendation by Brahmagupta. 9. —Bhāskara I. 10. —Lalla. 11. —Bhāskara II. 12. —Karaṇaratna. 13. —Śrīpati. 14. —Vākyakaraṇa. 15. —Grahalāghava. 16. Lunar eclipse diagram: Vāsiṣṭha Pauliṣa. 17. —Āryabhaṭa's Midnight system. 18. —Bhāskara I. 19. —Lalla. 20. —Sūryasiddhānta. 21. —Bhāskara II. 22. —Karaṇaratna. 23. Solar eclipse: Computation: Pauliṣa. 24. —Romakasiddhānta. 25. —Saurasiddhānta. 26. —Āryabhaṭa's Midnight system. 27. —Bhāskara I. 28. —Lalla. 29. —Mahāsiddhānta. 30. —Bhāskara II. 31. —Karaṇaratna. 32. —Śrīpati. 33. —Grahalāghava. 34. —Solar eclipse diagram: Romakasiddhānta. 35. —Saurasiddhānta. 36. Colour of eclipses. 37. Conditions for non-prediction of eclipses. 38. —Inscriptional references: Lunar eclipses. 38. Solar eclipses.

##### 17. Phases of the Moon ... 241

1. Periodical appearance of the Moon. 2. Moon's luminosity. 3. Conditions of Moon's visibility. 4. Preliminaries for computation. 5. Visibility corrections: Ākṣa, Āyana and the Third. 6. Rising and setting of the Moon. 7. Moon's shadow. 8. Computation of Moon's cusps. 9. Moon's cusps—diagram.

##### 18. Heliacal rising and setting of Planets and Stars ... 254

1. Heliacal rising and setting of planets. 2. Days of rising and setting. 3. Planetary elongation for rising and setting. 4. Visibility corrections. 5. Computation of rising and setting. 6. Jupiter's rising and setting. 7. Venus: Rising and setting. 8. Rising and setting of a star. 9. Canopus: Rising.

##### 19. Conjunction of Planets ... 264

1. Types of planetary conjunctions. 2. Conjunction: Principle of computation. 3. Computation of conjunction.

##### 20. Conjunction of Stars and Planets ... 271

1. Conjunction of stars and planets. 2. Principle of planet-star conjunction. 3. Occultation of stars by planets. 4. Occultation of Rohiṇī by planets. 5. Occultation of stars by the Moon. 6. Time of star-planet conjunction.

#### V. INNOVATIVE TRENDS

##### 21. Novel Innovations ... 274

1. True longitude computation on the sphere of the zodiac. 2. Computation of True Moon. 3. Simplified astronomical procedures.

#### IV. OCCULTATION

##### 16. Eclipses ... 196

1. Cause stated in the Ṛgveda. 2. Cause of the lunar eclipse. 3. Lunar eclipse: Principle of computation. 4. Lunar eclipse computation: Vāsiṣṭha and Pauliṣa. 5. —Saurasiddhānta. 6. —Āryabhaṭīya. 7. —Āryabhaṭa's Midnight system. 8. —Emendation by Brahmagupta. 9. —Bhāskara I. 10. —Lalla. 11. —Bhāskara II. 12. —Karaṇaratna. 13. —Śrīpati. 14. —Vākyakaraṇa. 15. —Grahalāghava. 16. Lunar eclipse diagram: Vāsiṣṭha Pauliṣa. 17. —Āryabhaṭa's Midnight system. 18. —Bhāskara I. 19. —Lalla. 20. —Sūryasiddhānta. 21. —Bhāskara II. 22. —Karaṇaratna. 23. Solar eclipse: Computation: Pauliṣa. 24. —Romakasiddhānta. 25. —Saurasiddhānta. 26. —Āryabhaṭa's Midnight system. 27. —Bhāskara I. 28. —Lalla. 29. —Mahāsiddhānta. 30. —Bhāskara II. 31. —Karaṇaratna. 32. —Śrīpati. 33. —Grahalāghava. 34. —Solar eclipse diagram: Romakasiddhānta. 35. —Saurasiddhānta. 36. Colour of eclipses. 37. Conditions for non-prediction of eclipses. 38. —Inscriptional references: Lunar eclipses. 38. Solar eclipses.

##### 17. Phases of the Moon ... 241

1. Periodical appearance of the Moon. 2. Moon's luminosity. 3. Conditions of Moon's visibility. 4. Preliminaries for computation. 5. Visibility corrections: Ākṣa, Āyana and the Third. 6. Rising and setting of the Moon. 7. Moon's shadow. 8. Computation of Moon's cusps. 9. Moon's cusps—diagram.

##### 18. Heliacal rising and setting of Planets and Stars ... 254

1. Heliacal rising and setting of planets. 2. Days of rising and setting. 3. Planetary elongation for rising and setting. 4. Visibility corrections. 5. Computation of rising and setting. 6. Jupiter's rising and setting. 7. Venus: Rising and setting. 8. Rising and setting of a star. 9. Canopus: Rising.

##### 19. Conjunction of Planets ... 264

1. Types of planetary conjunctions. 2. Conjunction: Principle of computation. 3. Computation of conjunction.

##### 20. Conjunction of Stars and Planets ... 271

1. Conjunction of stars and planets. 2. Principle of planet-star conjunction. 3. Occultation of stars by planets. 4. Occultation of Rohiṇī by planets. 5. Occultation of stars by the Moon. 6. Time of star-planet conjunction.

#### V. INNOVATIVE TRENDS

##### 21. Novel Innovations ... 274

1. True longitude computation on the sphere of the zodiac. 2. Computation of True Moon. 3. Simplified astronomical procedures.

#### IV. OCCULTATION

##### 16. Eclipses ... 196

1. Cause stated in the Ṛgveda. 2. Cause of the lunar eclipse. 3. Lunar eclipse: Principle of computation. 4. Lunar eclipse computation: Vāsiṣṭha and Pauliṣa. 5. —Saurasiddhānta. 6. —Āryabhaṭīya. 7. —Āryabhaṭa's Midnight system. 8. —Emendation by Brahmagupta. 9. —Bhāskara I. 10. —Lalla. 11. —Bhāskara II. 12. —Karaṇaratna. 13. —Śrīpati. 14. —Vākyakaraṇa. 15. —Grahalāghava. 16. Lunar eclipse diagram: Vāsiṣṭha Pauliṣa. 17. —Āryabhaṭa's Midnight system. 18. —Bhāskara I. 19. —Lalla. 20. —Sūryasiddhānta. 21. —Bhāskara II. 22. —Karaṇaratna. 23. Solar eclipse: Computation: Pauliṣa. 24. —Romakasiddhānta. 25. —Saurasiddhānta. 26. —Āryabhaṭa's Midnight system. 27. —Bhāskara I. 28. —Lalla. 29. —Mahāsiddhānta. 30. —Bhāskara II. 31. —Karaṇaratna. 32. —Śrīpati. 33. —Grahalāghava. 34. —Solar eclipse diagram: Romakasiddhānta. 35. —Saurasiddhānta. 36. Colour of eclipses. 37. Conditions for non-prediction of eclipses. 38. —Inscriptional references: Lunar eclipses. 38. Solar eclipses.

##### 17. Phases of the Moon ... 241

1. Periodical appearance of the Moon. 2. Moon's luminosity. 3. Conditions of Moon's visibility. 4. Preliminaries for computation. 5. Visibility corrections: Ākṣa, Āyana and the Third. 6. Rising and setting of the Moon. 7. Moon's shadow. 8. Computation of Moon's cusps. 9. Moon's cusps—diagram.

##### 18. Heliacal rising and setting of Planets and Stars ... 254

1. Heliacal rising and setting of planets. 2. Days of rising and setting. 3. Planetary elongation for rising and setting. 4. Visibility corrections. 5. Computation of rising and setting. 6. Jupiter's rising and setting. 7. Venus: Rising and setting. 8. Rising and setting of a star. 9. Canopus: Rising.

##### 19. Conjunction of Planets ... 264

1. Types of planetary conjunctions. 2. Conjunction: Principle of computation. 3. Computation of conjunction.

##### 20. Conjunction of Stars and Planets ... 271

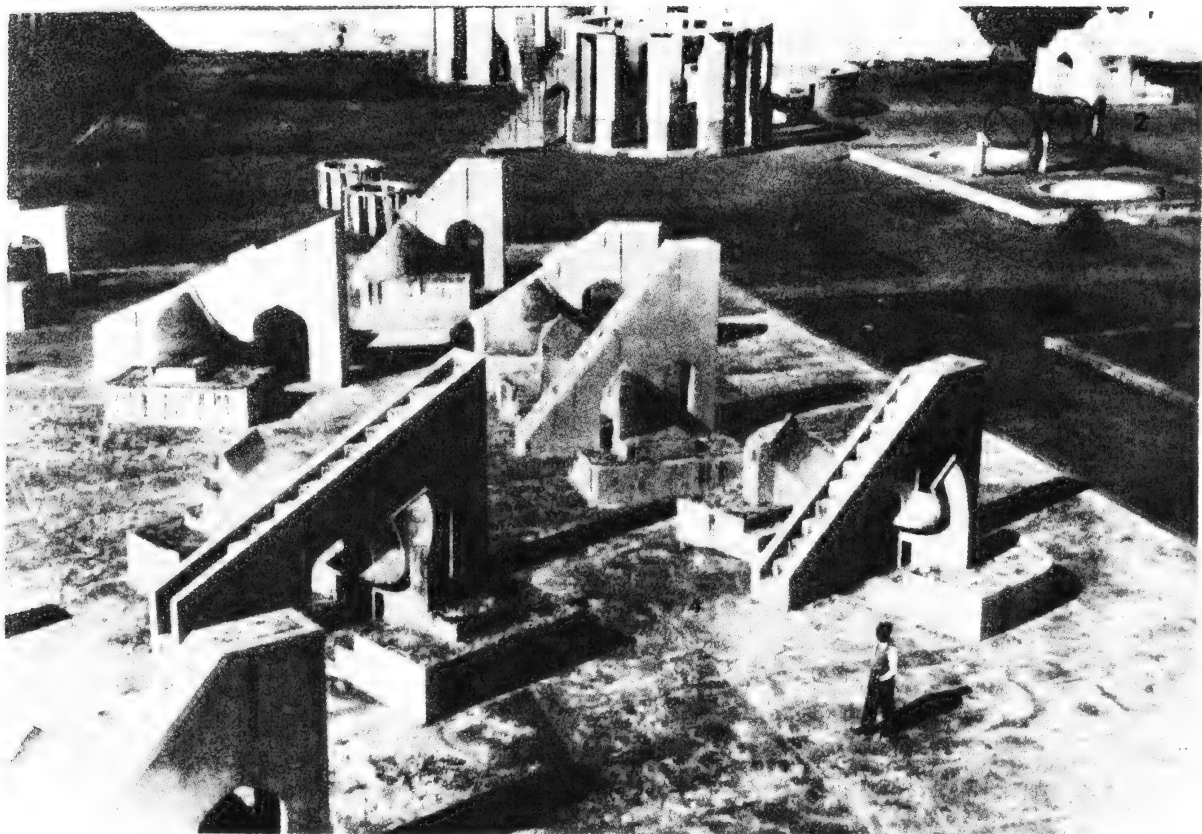
1. Conjunction of stars and planets. 2. Principle of planet-star conjunction. 3. Occultation of stars by planets. 4. Occultation of Rohiṇī by planets. 5. Occultation of stars by the Moon. 6. Time of star-planet conjunction.

#### V. INNOVATIVE TRENDS

##### 21. Novel Innovations ... 274

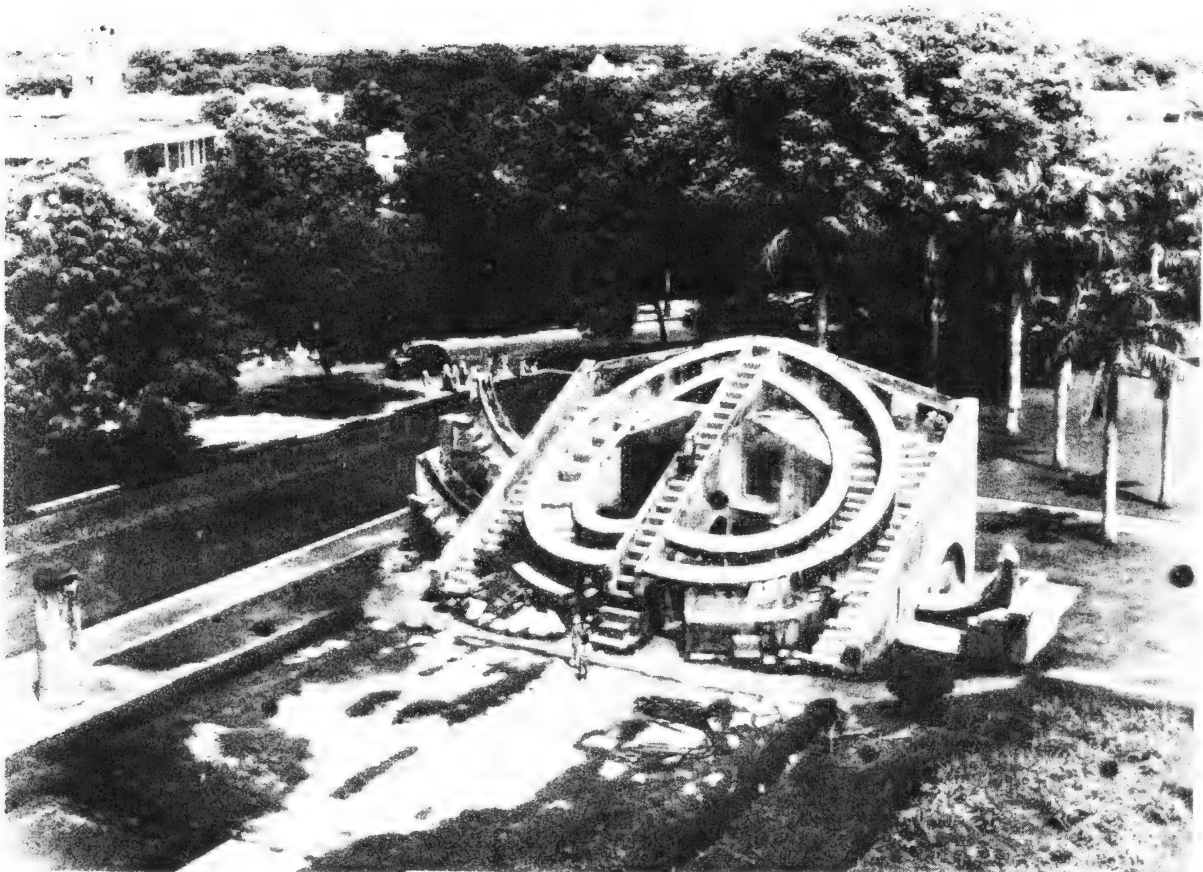
1. True longitude computation on the sphere of the zodiac. 2. Computation of True Moon. 3. Simplified astronomical procedures.





**Maharaja Sawai Jai Singh's Observatory, Jaipur: A view**

- |                       |                            |
|-----------------------|----------------------------|
| 1. Rāma-yantra        | 2. Declination instruments |
| 3. Jayaprakāśa-yantra | 4. Rāsi-yantra complex     |



**Maharaja Sawai Jai Singh's Observatory, Delhi: Miśra-yantra**

#### IV. OCCULTATION

##### 16. Eclipses ... 196

1. Cause stated in the Ṛgveda. 2. Cause of the lunar eclipse. 3. Lunar eclipse: Principle of computation. 4. Lunar eclipse computation: Vāsiṣṭha and Pauliṣa. 5. —Saurasiddhānta. 6. —Āryabhaṭīya. 7. —Āryabhaṭa's Midnight system. 8. —Emendation by Brahmagupta. 9. —Bhāskara I. 10. —Lalla. 11. —Bhāskara II. 12. —Karaṇaratna. 13. —Śrīpati. 14. —Vākyakaraṇa. 15. —Grahalāghava. 16. Lunar eclipse diagram: Vāsiṣṭha Pauliṣa. 17. —Āryabhaṭa's Midnight system. 18. —Bhāskara I. 19. —Lalla. 20. —Sūryasiddhānta. 21. —Bhāskara II. 22. —Karaṇaratna. 23. Solar eclipse: Computation: Pauliṣa. 24. —Romakasiddhānta. 25. —Saurasiddhānta. 26. —Āryabhaṭa's Midnight system. 27. —Bhāskara I. 28. —Lalla. 29. —Mahāsiddhānta. 30. —Bhāskara II. 31. —Karaṇaratna. 32. —Śrīpati. 33. —Grahalāghava. 34. —Solar eclipse diagram: Romakasiddhānta. 35. —Saurasiddhānta. 36. Colour of eclipses. 37. Conditions for non-prediction of eclipses. 38. —Inscriptional references: Lunar eclipses. 38. Solar eclipses.

##### 17. Phases of the Moon ... 241

1. Periodical appearance of the Moon. 2. Moon's luminosity. 3. Conditions of Moon's visibility. 4. Preliminaries for computation. 5. Visibility corrections: Ākṣa, Āyana and the Third. 6. Rising and setting of the Moon. 7. Moon's shadow. 8. Computation of Moon's cusps. 9. Moon's cusps—diagram.

##### 18. Heliacal rising and setting of Planets and Stars ... 254

1. Heliacal rising and setting of planets. 2. Days of rising and setting. 3. Planetary elongation for rising and setting. 4. Visibility corrections. 5. Computation of rising and setting. 6. Jupiter's rising and setting. 7. Venus: Rising and setting. 8. Rising and setting of a star. 9. Canopus: Rising.

##### 19. Conjunction of Planets ... 264

1. Types of planetary conjunctions. 2. Conjunction: Principle of computation. 3. Computation of conjunction.

##### 20. Conjunction of Stars and Planets ... 271

1. Conjunction of stars and planets. 2. Principle of planet-star conjunction. 3. Occultation of stars by planets. 4. Occultation of Rohiṇī by planets. 5. Occultation of stars by the Moon. 6. Time of star-planet conjunction.

#### V. INNOVATIVE TRENDS

##### 21. Novel Innovations ... 274

1. True longitude computation on the sphere of the zodiac. 2. Computation of True Moon. 3. Simplified astronomical procedures.

#### IV. OCCULTATION

##### 16. Eclipses ... 196

1. Cause stated in the Ṛgveda. 2. Cause of the lunar eclipse. 3. Lunar eclipse: Principle of computation. 4. Lunar eclipse computation: Vāsiṣṭha and Pauliṣa. 5. —Saurasiddhānta. 6. —Āryabhaṭīya. 7. —Āryabhaṭa's Midnight system. 8. —Emendation by Brahmagupta. 9. —Bhāskara I. 10. —Lalla. 11. —Bhāskara II. 12. —Karaṇaratna. 13. —Śrīpati. 14. —Vākyakaraṇa. 15. —Grahalāghava. 16. Lunar eclipse diagram: Vāsiṣṭha Pauliṣa. 17. —Āryabhaṭa's Midnight system. 18. —Bhāskara I. 19. —Lalla. 20. —Sūryasiddhānta. 21. —Bhāskara II. 22. —Karaṇaratna. 23. Solar eclipse: Computation: Pauliṣa. 24. —Romakasiddhānta. 25. —Saurasiddhānta. 26. —Āryabhaṭa's Midnight system. 27. —Bhāskara I. 28. —Lalla. 29. —Mahāsiddhānta. 30. —Bhāskara II. 31. —Karaṇaratna. 32. —Śrīpati. 33. —Grahalāghava. 34. —Solar eclipse diagram: Romakasiddhānta. 35. —Saurasiddhānta. 36. Colour of eclipses. 37. Conditions for non-prediction of eclipses. 38. —Inscriptional references: Lunar eclipses. 38. Solar eclipses.

##### 17. Phases of the Moon ... 241

1. Periodical appearance of the Moon. 2. Moon's luminosity. 3. Conditions of Moon's visibility. 4. Preliminaries for computation. 5. Visibility corrections: Ākṣa, Āyana and the Third. 6. Rising and setting of the Moon. 7. Moon's shadow. 8. Computation of Moon's cusps. 9. Moon's cusps—diagram.

##### 18. Heliacal rising and setting of Planets and Stars ... 254

1. Heliacal rising and setting of planets. 2. Days of rising and setting. 3. Planetary elongation for rising and setting. 4. Visibility corrections. 5. Computation of rising and setting. 6. Jupiter's rising and setting. 7. Venus: Rising and setting. 8. Rising and setting of a star. 9. Canopus: Rising.

##### 19. Conjunction of Planets ... 264

1. Types of planetary conjunctions. 2. Conjunction: Principle of computation. 3. Computation of conjunction.

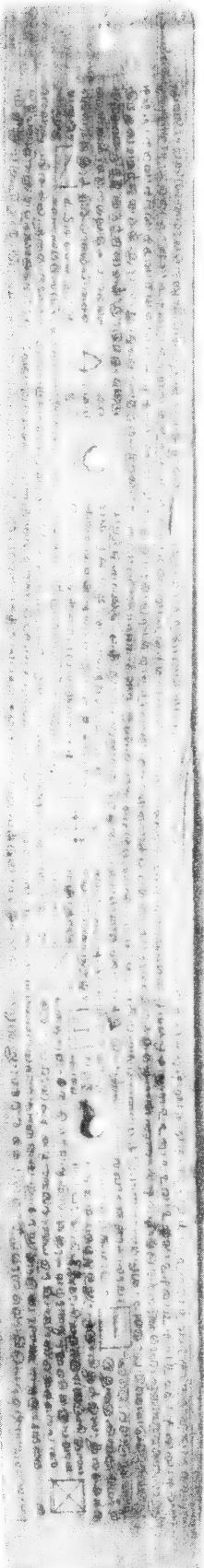
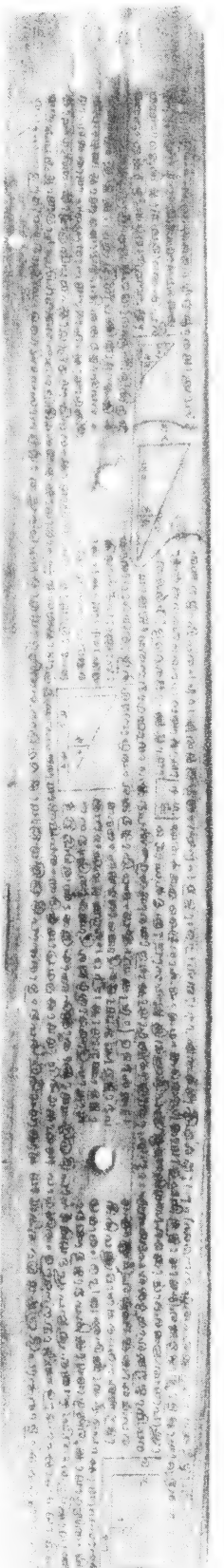
##### 20. Conjunction of Stars and Planets ... 271

1. Conjunction of stars and planets. 2. Principle of planet-star conjunction. 3. Occultation of stars by planets. 4. Occultation of Rohiṇī by planets. 5. Occultation of stars by the Moon. 6. Time of star-planet conjunction.

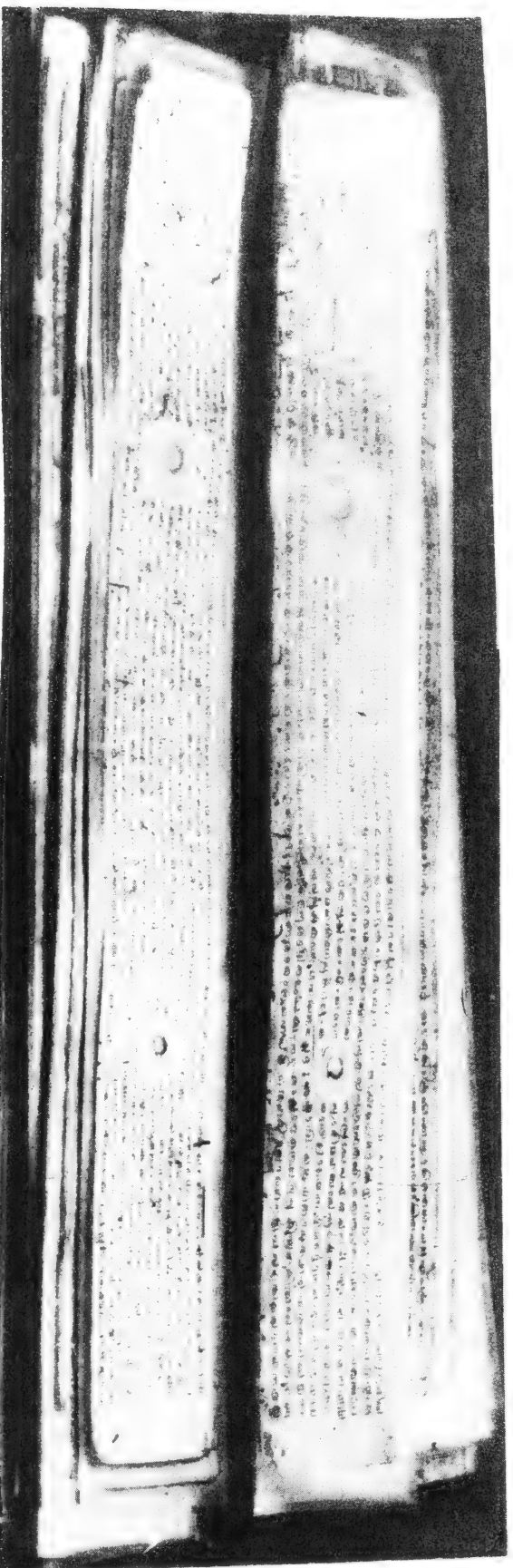
#### V. INNOVATIVE TRENDS

##### 21. Novel Innovations ... 274

1. True longitude computation on the sphere of the zodiac. 2. Computation of True Moon. 3. Simplified astronomical procedures.



Aryabhatīya-bhāṣya of Govindasvāmīn  
Facsimile of two pages from palmleaf ms. with K. V. Sarma



Laghumāṣa of Muñḍāla with the commentary of Sūryadevayajvan  
Facsimile of palmleaf ms. with K. V. Sarma

#### IV. OCCULTATION

##### 16. Eclipses ... 196

1. Cause stated in the Ṛgveda. 2. Cause of the lunar eclipse. 3. Lunar eclipse: Principle of computation. 4. Lunar eclipse computation: Vāsiṣṭha and Pauliṣa. 5. —Saurasiddhānta. 6. —Āryabhaṭīya. 7. —Āryabhaṭa's Midnight system. 8. —Emendation by Brahmagupta. 9. —Bhāskara I. 10. —Lalla. 11. —Bhāskara II. 12. —Karaṇaratna. 13. —Śrīpati. 14. —Vākyakaraṇa. 15. —Grahalāghava. 16. Lunar eclipse diagram: Vāsiṣṭha Pauliṣa. 17. —Āryabhaṭa's Midnight system. 18. —Bhāskara I. 19. —Lalla. 20. —Sūryasiddhānta. 21. —Bhāskara II. 22. —Karaṇaratna. 23. Solar eclipse: Computation: Pauliṣa. 24. —Romakasiddhānta. 25. —Saurasiddhānta. 26. —Āryabhaṭa's Midnight system. 27. —Bhāskara I. 28. —Lalla. 29. —Mahāsiddhānta. 30. —Bhāskara II. 31. —Karaṇaratna. 32. —Śrīpati. 33. —Grahalāghava. 34. —Solar eclipse diagram: Romakasiddhānta. 35. —Saurasiddhānta. 36. Colour of eclipses. 37. Conditions for non-prediction of eclipses. 38. —Inscriptional references: Lunar eclipses. 38. Solar eclipses.

##### 17. Phases of the Moon ... 241

1. Periodical appearance of the Moon. 2. Moon's luminosity. 3. Conditions of Moon's visibility. 4. Preliminaries for computation. 5. Visibility corrections: Ākṣa, Āyana and the Third. 6. Rising and setting of the Moon. 7. Moon's shadow. 8. Computation of Moon's cusps. 9. Moon's cusps—diagram.

##### 18. Heliacal rising and setting of Planets and Stars ... 254

1. Heliacal rising and setting of planets. 2. Days of rising and setting. 3. Planetary elongation for rising and setting. 4. Visibility corrections. 5. Computation of rising and setting. 6. Jupiter's rising and setting. 7. Venus: Rising and setting. 8. Rising and setting of a star. 9. Canopus: Rising.

##### 19. Conjunction of Planets ... 264

1. Types of planetary conjunctions. 2. Conjunction: Principle of computation. 3. Computation of conjunction.

##### 20. Conjunction of Stars and Planets ... 271

1. Conjunction of stars and planets. 2. Principle of planet-star conjunction. 3. Occultation of stars by planets. 4. Occultation of Rohiṇī by planets. 5. Occultation of stars by the Moon. 6. Time of star-planet conjunction.

#### V. INNOVATIVE TRENDS

##### 21. Novel Innovations ... 274

1. True longitude computation on the sphere of the zodiac. 2. Computation of True Moon. 3. Simplified astronomical procedures.

#### IV. OCCULTATION

##### 16. Eclipses ... 196

1. Cause stated in the Ṛgveda. 2. Cause of the lunar eclipse. 3. Lunar eclipse: Principle of computation. 4. Lunar eclipse computation: Vāsiṣṭha and Pauliṣa. 5. —Saurasiddhānta. 6. —Āryabhaṭīya. 7. —Āryabhaṭa's Midnight system. 8. —Emendation by Brahmagupta. 9. —Bhāskara I. 10. —Lalla. 11. —Bhāskara II. 12. —Karaṇaratna. 13. —Śrīpati. 14. —Vākyakaraṇa. 15. —Grahalāghava. 16. Lunar eclipse diagram: Vāsiṣṭha Pauliṣa. 17. —Āryabhaṭa's Midnight system. 18. —Bhāskara I. 19. —Lalla. 20. —Sūryasiddhānta. 21. —Bhāskara II. 22. —Karaṇaratna. 23. Solar eclipse: Computation: Pauliṣa. 24. —Romakasiddhānta. 25. —Saurasiddhānta. 26. —Āryabhaṭa's Midnight system. 27. —Bhāskara I. 28. —Lalla. 29. —Mahāsiddhānta. 30. —Bhāskara II. 31. —Karaṇaratna. 32. —Śrīpati. 33. —Grahalāghava. 34. —Solar eclipse diagram: Romakasiddhānta. 35. —Saurasiddhānta. 36. Colour of eclipses. 37. Conditions for non-prediction of eclipses. 38. —Inscriptional references: Lunar eclipses. 38. Solar eclipses.

##### 17. Phases of the Moon ... 241

1. Periodical appearance of the Moon. 2. Moon's luminosity. 3. Conditions of Moon's visibility. 4. Preliminaries for computation. 5. Visibility corrections: Ākṣa, Āyana and the Third. 6. Rising and setting of the Moon. 7. Moon's shadow. 8. Computation of Moon's cusps. 9. Moon's cusps—diagram.

##### 18. Heliacal rising and setting of Planets and Stars ... 254

1. Heliacal rising and setting of planets. 2. Days of rising and setting. 3. Planetary elongation for rising and setting. 4. Visibility corrections. 5. Computation of rising and setting. 6. Jupiter's rising and setting. 7. Venus: Rising and setting. 8. Rising and setting of a star. 9. Canopus: Rising.

##### 19. Conjunction of Planets ... 264

1. Types of planetary conjunctions. 2. Conjunction: Principle of computation. 3. Computation of conjunction.

##### 20. Conjunction of Stars and Planets ... 271

1. Conjunction of stars and planets. 2. Principle of planet-star conjunction. 3. Occultation of stars by planets. 4. Occultation of Rohiṇī by planets. 5. Occultation of stars by the Moon. 6. Time of star-planet conjunction.

#### V. INNOVATIVE TRENDS

##### 21. Novel Innovations ... 274

1. True longitude computation on the sphere of the zodiac. 2. Computation of True Moon. 3. Simplified astronomical procedures.

#### IV. OCCULTATION

##### 16. Eclipses ... 196

1. Cause stated in the Ṛgveda. 2. Cause of the lunar eclipse. 3. Lunar eclipse: Principle of computation. 4. Lunar eclipse computation: Vāsiṣṭha and Pauliṣa. 5. —Saurasiddhānta. 6. —Āryabhaṭīya. 7. —Āryabhaṭa's Midnight system. 8. —Emendation by Brahmagupta. 9. —Bhāskara I. 10. —Lalla. 11. —Bhāskara II. 12. —Karaṇaratna. 13. —Śrīpati. 14. —Vākyakaraṇa. 15. —Grahalāghava. 16. Lunar eclipse diagram: Vāsiṣṭha Pauliṣa. 17. —Āryabhaṭa's Midnight system. 18. —Bhāskara I. 19. —Lalla. 20. —Sūryasiddhānta. 21. —Bhāskara II. 22. —Karaṇaratna. 23. Solar eclipse: Computation: Pauliṣa. 24. —Romakasiddhānta. 25. —Saurasiddhānta. 26. —Āryabhaṭa's Midnight system. 27. —Bhāskara I. 28. —Lalla. 29. —Mahāsiddhānta. 30. —Bhāskara II. 31. —Karaṇaratna. 32. —Śrīpati. 33. —Grahalāghava. 34. —Solar eclipse diagram: Romakasiddhānta. 35. —Saurasiddhānta. 36. Colour of eclipses. 37. Conditions for non-prediction of eclipses. 38. —Inscriptional references: Lunar eclipses. 38. Solar eclipses.

##### 17. Phases of the Moon ... 241

1. Periodical appearance of the Moon. 2. Moon's luminosity. 3. Conditions of Moon's visibility. 4. Preliminaries for computation. 5. Visibility corrections: Ākṣa, Āyana and the Third. 6. Rising and setting of the Moon. 7. Moon's shadow. 8. Computation of Moon's cusps. 9. Moon's cusps—diagram.

##### 18. Heliacal rising and setting of Planets and Stars ... 254

1. Heliacal rising and setting of planets. 2. Days of rising and setting. 3. Planetary elongation for rising and setting. 4. Visibility corrections. 5. Computation of rising and setting. 6. Jupiter's rising and setting. 7. Venus: Rising and setting. 8. Rising and setting of a star. 9. Canopus: Rising.

##### 19. Conjunction of Planets ... 264

1. Types of planetary conjunctions. 2. Conjunction: Principle of computation. 3. Computation of conjunction.

##### 20. Conjunction of Stars and Planets ... 271

1. Conjunction of stars and planets. 2. Principle of planet-star conjunction. 3. Occultation of stars by planets. 4. Occultation of Rohiṇī by planets. 5. Occultation of stars by the Moon. 6. Time of star-planet conjunction.

#### V. INNOVATIVE TRENDS

##### 21. Novel Innovations ... 274

1. True longitude computation on the sphere of the zodiac. 2. Computation of True Moon. 3. Simplified astronomical procedures.

#### IV. OCCULTATION

##### 16. Eclipses ... 196

1. Cause stated in the Ṛgveda. 2. Cause of the lunar eclipse. 3. Lunar eclipse: Principle of computation. 4. Lunar eclipse computation: Vāsiṣṭha and Pauliṣa. 5. —Saurasiddhānta. 6. —Āryabhaṭīya. 7. —Āryabhaṭa's Midnight system. 8. —Emendation by Brahmagupta. 9. —Bhāskara I. 10. —Lalla. 11. —Bhāskara II. 12. —Karaṇaratna. 13. —Śrīpati. 14. —Vākyakaraṇa. 15. —Grahalāghava. 16. Lunar eclipse diagram: Vāsiṣṭha Pauliṣa. 17. —Āryabhaṭa's Midnight system. 18. —Bhāskara I. 19. —Lalla. 20. —Sūryasiddhānta. 21. —Bhāskara II. 22. —Karaṇaratna. 23. Solar eclipse: Computation: Pauliṣa. 24. —Romakasiddhānta. 25. —Saurasiddhānta. 26. —Āryabhaṭa's Midnight system. 27. —Bhāskara I. 28. —Lalla. 29. —Mahāsiddhānta. 30. —Bhāskara II. 31. —Karaṇaratna. 32. —Śrīpati. 33. —Grahalāghava. 34. —Solar eclipse diagram: Romakasiddhānta. 35. —Saurasiddhānta. 36. Colour of eclipses. 37. Conditions for non-prediction of eclipses. 38. —Inscriptional references: Lunar eclipses. 38. Solar eclipses.

##### 17. Phases of the Moon ... 241

1. Periodical appearance of the Moon. 2. Moon's luminosity. 3. Conditions of Moon's visibility. 4. Preliminaries for computation. 5. Visibility corrections: Ākṣa, Āyana and the Third. 6. Rising and setting of the Moon. 7. Moon's shadow. 8. Computation of Moon's cusps. 9. Moon's cusps—diagram.

##### 18. Heliacal rising and setting of Planets and Stars ... 254

1. Heliacal rising and setting of planets. 2. Days of rising and setting. 3. Planetary elongation for rising and setting. 4. Visibility corrections. 5. Computation of rising and setting. 6. Jupiter's rising and setting. 7. Venus: Rising and setting. 8. Rising and setting of a star. 9. Canopus: Rising.

##### 19. Conjunction of Planets ... 264

1. Types of planetary conjunctions. 2. Conjunction: Principle of computation. 3. Computation of conjunction.

##### 20. Conjunction of Stars and Planets ... 271

1. Conjunction of stars and planets. 2. Principle of planet-star conjunction. 3. Occultation of stars by planets. 4. Occultation of Rohiṇī by planets. 5. Occultation of stars by the Moon. 6. Time of star-planet conjunction.

#### V. INNOVATIVE TRENDS

##### 21. Novel Innovations ... 274

1. True longitude computation on the sphere of the zodiac. 2. Computation of True Moon. 3. Simplified astronomical procedures.



#### IV. OCCULTATION

##### 16. Eclipses ... 196

1. Cause stated in the Ṛgveda. 2. Cause of the lunar eclipse. 3. Lunar eclipse: Principle of computation. 4. Lunar eclipse computation: Vāsiṣṭha and Pauliṣa. 5. —Saurasiddhānta. 6. —Āryabhaṭīya. 7. —Āryabhaṭa's Midnight system. 8. —Emendation by Brahmagupta. 9. —Bhāskara I. 10. —Lalla. 11. —Bhāskara II. 12. —Karaṇaratna. 13. —Śrīpati. 14. —Vākyakaraṇa. 15. —Grahalāghava. 16. Lunar eclipse diagram: Vāsiṣṭha Pauliṣa. 17. —Āryabhaṭa's Midnight system. 18. —Bhāskara I. 19. —Lalla. 20. —Sūryasiddhānta. 21. —Bhāskara II. 22. —Karaṇaratna. 23. Solar eclipse: Computation: Pauliṣa. 24. —Romakasiddhānta. 25. —Saurasiddhānta. 26. —Āryabhaṭa's Midnight system. 27. —Bhāskara I. 28. —Lalla. 29. —Mahāsiddhānta. 30. —Bhāskara II. 31. —Karaṇaratna. 32. —Śrīpati. 33. —Grahalāghava. 34. —Solar eclipse diagram: Romakasiddhānta. 35. —Saurasiddhānta. 36. Colour of eclipses. 37. Conditions for non-prediction of eclipses. 38. —Inscriptional references: Lunar eclipses. 38. Solar eclipses.

##### 17. Phases of the Moon ... 241

1. Periodical appearance of the Moon. 2. Moon's luminosity. 3. Conditions of Moon's visibility. 4. Preliminaries for computation. 5. Visibility corrections: Ākṣa, Āyana and the Third. 6. Rising and setting of the Moon. 7. Moon's shadow. 8. Computation of Moon's cusps. 9. Moon's cusps—diagram.

##### 18. Heliacal rising and setting of Planets and Stars ... 254

1. Heliacal rising and setting of planets. 2. Days of rising and setting. 3. Planetary elongation for rising and setting. 4. Visibility corrections. 5. Computation of rising and setting. 6. Jupiter's rising and setting. 7. Venus: Rising and setting. 8. Rising and setting of a star. 9. Canopus: Rising.

##### 19. Conjunction of Planets ... 264

1. Types of planetary conjunctions. 2. Conjunction: Principle of computation. 3. Computation of conjunction.

##### 20. Conjunction of Stars and Planets ... 271

1. Conjunction of stars and planets. 2. Principle of planet-star conjunction. 3. Occultation of stars by planets. 4. Occultation of Rohiṇī by planets. 5. Occultation of stars by the Moon. 6. Time of star-planet conjunction.

#### V. INNOVATIVE TRENDS

##### 21. Novel Innovations ... 274

1. True longitude computation on the sphere of the zodiac. 2. Computation of True Moon. 3. Simplified astronomical procedures.

#### IV. OCCULTATION

##### 16. Eclipses ... 196

1. Cause stated in the Ṛgveda. 2. Cause of the lunar eclipse. 3. Lunar eclipse: Principle of computation. 4. Lunar eclipse computation: Vāsiṣṭha and Pauliṣa. 5. —Saurasiddhānta. 6. —Āryabhaṭīya. 7. —Āryabhaṭa's Midnight system. 8. —Emendation by Brahmagupta. 9. —Bhāskara I. 10. —Lalla. 11. —Bhāskara II. 12. —Karaṇaratna. 13. —Śrīpati. 14. —Vākyakaraṇa. 15. —Grahalāghava. 16. Lunar eclipse diagram: Vāsiṣṭha Pauliṣa. 17. —Āryabhaṭa's Midnight system. 18. —Bhāskara I. 19. —Lalla. 20. —Sūryasiddhānta. 21. —Bhāskara II. 22. —Karaṇaratna. 23. Solar eclipse: Computation: Pauliṣa. 24. —Romakasiddhānta. 25. —Saurasiddhānta. 26. —Āryabhaṭa's Midnight system. 27. —Bhāskara I. 28. —Lalla. 29. —Mahāsiddhānta. 30. —Bhāskara II. 31. —Karaṇaratna. 32. —Śrīpati. 33. —Grahalāghava. 34. —Solar eclipse diagram: Romakasiddhānta. 35. —Saurasiddhānta. 36. Colour of eclipses. 37. Conditions for non-prediction of eclipses. 38. —Inscriptional references: Lunar eclipses. 38. Solar eclipses.

##### 17. Phases of the Moon ... 241

1. Periodical appearance of the Moon. 2. Moon's luminosity. 3. Conditions of Moon's visibility. 4. Preliminaries for computation. 5. Visibility corrections: Ākṣa, Āyana and the Third. 6. Rising and setting of the Moon. 7. Moon's shadow. 8. Computation of Moon's cusps. 9. Moon's cusps—diagram.

##### 18. Heliacal rising and setting of Planets and Stars ... 254

1. Heliacal rising and setting of planets. 2. Days of rising and setting. 3. Planetary elongation for rising and setting. 4. Visibility corrections. 5. Computation of rising and setting. 6. Jupiter's rising and setting. 7. Venus: Rising and setting. 8. Rising and setting of a star. 9. Canopus: Rising.

##### 19. Conjunction of Planets ... 264

1. Types of planetary conjunctions. 2. Conjunction: Principle of computation. 3. Computation of conjunction.

##### 20. Conjunction of Stars and Planets ... 271

1. Conjunction of stars and planets. 2. Principle of planet-star conjunction. 3. Occultation of stars by planets. 4. Occultation of Rohiṇī by planets. 5. Occultation of stars by the Moon. 6. Time of star-planet conjunction.

#### V. INNOVATIVE TRENDS

##### 21. Novel Innovations ... 274

1. True longitude computation on the sphere of the zodiac. 2. Computation of True Moon. 3. Simplified astronomical procedures.

#### IV. OCCULTATION

##### 16. Eclipses ... 196

1. Cause stated in the Ṛgveda. 2. Cause of the lunar eclipse. 3. Lunar eclipse: Principle of computation. 4. Lunar eclipse computation: Vāsiṣṭha and Pauliṣa. 5. —Saurasiddhānta. 6. —Āryabhaṭīya. 7. —Āryabhaṭa's Midnight system. 8. —Emendation by Brahmagupta. 9. —Bhāskara I. 10. —Lalla. 11. —Bhāskara II. 12. —Karaṇaratna. 13. —Śrīpati. 14. —Vākyakaraṇa. 15. —Grahalāghava. 16. Lunar eclipse diagram: Vāsiṣṭha Pauliṣa. 17. —Āryabhaṭa's Midnight system. 18. —Bhāskara I. 19. —Lalla. 20. —Sūryasiddhānta. 21. —Bhāskara II. 22. —Karaṇaratna. 23. Solar eclipse: Computation: Pauliṣa. 24. —Romakasiddhānta. 25. —Saurasiddhānta. 26. —Āryabhaṭa's Midnight system. 27. —Bhāskara I. 28. —Lalla. 29. —Mahāsiddhānta. 30. —Bhāskara II. 31. —Karaṇaratna. 32. —Śrīpati. 33. —Grahalāghava. 34. —Solar eclipse diagram: Romakasiddhānta. 35. —Saurasiddhānta. 36. Colour of eclipses. 37. Conditions for non-prediction of eclipses. 38. —Inscriptional references: Lunar eclipses. 38. Solar eclipses.

##### 17. Phases of the Moon ... 241

1. Periodical appearance of the Moon. 2. Moon's luminosity. 3. Conditions of Moon's visibility. 4. Preliminaries for computation. 5. Visibility corrections: Ākṣa, Āyana and the Third. 6. Rising and setting of the Moon. 7. Moon's shadow. 8. Computation of Moon's cusps. 9. Moon's cusps—diagram.

##### 18. Heliacal rising and setting of Planets and Stars ... 254

1. Heliacal rising and setting of planets. 2. Days of rising and setting. 3. Planetary elongation for rising and setting. 4. Visibility corrections. 5. Computation of rising and setting. 6. Jupiter's rising and setting. 7. Venus: Rising and setting. 8. Rising and setting of a star. 9. Canopus: Rising.

##### 19. Conjunction of Planets ... 264

1. Types of planetary conjunctions. 2. Conjunction: Principle of computation. 3. Computation of conjunction.

##### 20. Conjunction of Stars and Planets ... 271

1. Conjunction of stars and planets. 2. Principle of planet-star conjunction. 3. Occultation of stars by planets. 4. Occultation of Rohiṇī by planets. 5. Occultation of stars by the Moon. 6. Time of star-planet conjunction.

#### V. INNOVATIVE TRENDS

##### 21. Novel Innovations ... 274

1. True longitude computation on the sphere of the zodiac. 2. Computation of True Moon. 3. Simplified astronomical procedures.

#### IV. OCCULTATION

##### 16. Eclipses ... 196

1. Cause stated in the Ṛgveda. 2. Cause of the lunar eclipse. 3. Lunar eclipse: Principle of computation. 4. Lunar eclipse computation: Vāsiṣṭha and Pauliṣa. 5. —Saurasiddhānta. 6. —Āryabhaṭīya. 7. —Āryabhaṭa's Midnight system. 8. —Emendation by Brahmagupta. 9. —Bhāskara I. 10. —Lalla. 11. —Bhāskara II. 12. —Karaṇaratna. 13. —Śrīpati. 14. —Vākyakaraṇa. 15. —Grahalāghava. 16. Lunar eclipse diagram: Vāsiṣṭha Pauliṣa. 17. —Āryabhaṭa's Midnight system. 18. —Bhāskara I. 19. —Lalla. 20. —Sūryasiddhānta. 21. —Bhāskara II. 22. —Karaṇaratna. 23. Solar eclipse: Computation: Pauliṣa. 24. —Romakasiddhānta. 25. —Saurasiddhānta. 26. —Āryabhaṭa's Midnight system. 27. —Bhāskara I. 28. —Lalla. 29. —Mahāsiddhānta. 30. —Bhāskara II. 31. —Karaṇaratna. 32. —Śrīpati. 33. —Grahalāghava. 34. —Solar eclipse diagram: Romakasiddhānta. 35. —Saurasiddhānta. 36. Colour of eclipses. 37. Conditions for non-prediction of eclipses. 38. —Inscriptional references: Lunar eclipses. 38. Solar eclipses.

##### 17. Phases of the Moon ... 241

1. Periodical appearance of the Moon. 2. Moon's luminosity. 3. Conditions of Moon's visibility. 4. Preliminaries for computation. 5. Visibility corrections: Ākṣa, Āyana and the Third. 6. Rising and setting of the Moon. 7. Moon's shadow. 8. Computation of Moon's cusps. 9. Moon's cusps—diagram.

##### 18. Heliacal rising and setting of Planets and Stars ... 254

1. Heliacal rising and setting of planets. 2. Days of rising and setting. 3. Planetary elongation for rising and setting. 4. Visibility corrections. 5. Computation of rising and setting. 6. Jupiter's rising and setting. 7. Venus: Rising and setting. 8. Rising and setting of a star. 9. Canopus: Rising.

##### 19. Conjunction of Planets ... 264

1. Types of planetary conjunctions. 2. Conjunction: Principle of computation. 3. Computation of conjunction.

##### 20. Conjunction of Stars and Planets ... 271

1. Conjunction of stars and planets. 2. Principle of planet-star conjunction. 3. Occultation of stars by planets. 4. Occultation of Rohiṇī by planets. 5. Occultation of stars by the Moon. 6. Time of star-planet conjunction.

#### V. INNOVATIVE TRENDS

##### 21. Novel Innovations ... 274

1. True longitude computation on the sphere of the zodiac. 2. Computation of True Moon. 3. Simplified astronomical procedures.

#### IV. OCCULTATION

##### 16. Eclipses ... 196

1. Cause stated in the Ṛgveda. 2. Cause of the lunar eclipse. 3. Lunar eclipse: Principle of computation. 4. Lunar eclipse computation: Vāsiṣṭha and Pauliṣa. 5. —Saurasiddhānta. 6. —Āryabhaṭīya. 7. —Āryabhaṭa's Midnight system. 8. —Emendation by Brahmagupta. 9. —Bhāskara I. 10. —Lalla. 11. —Bhāskara II. 12. —Karaṇaratna. 13. —Śrīpati. 14. —Vākyakaraṇa. 15. —Grahalāghava. 16. Lunar eclipse diagram: Vāsiṣṭha Pauliṣa. 17. —Āryabhaṭa's Midnight system. 18. —Bhāskara I. 19. —Lalla. 20. —Sūryasiddhānta. 21. —Bhāskara II. 22. —Karaṇaratna. 23. Solar eclipse: Computation: Pauliṣa. 24. —Romakasiddhānta. 25. —Saurasiddhānta. 26. —Āryabhaṭa's Midnight system. 27. —Bhāskara I. 28. —Lalla. 29. —Mahāsiddhānta. 30. —Bhāskara II. 31. —Karaṇaratna. 32. —Śrīpati. 33. —Grahalāghava. 34. —Solar eclipse diagram: Romakasiddhānta. 35. —Saurasiddhānta. 36. Colour of eclipses. 37. Conditions for non-prediction of eclipses. 38. —Inscriptional references: Lunar eclipses. 38. Solar eclipses.

##### 17. Phases of the Moon ... 241

1. Periodical appearance of the Moon. 2. Moon's luminosity. 3. Conditions of Moon's visibility. 4. Preliminaries for computation. 5. Visibility corrections: Ākṣa, Āyana and the Third. 6. Rising and setting of the Moon. 7. Moon's shadow. 8. Computation of Moon's cusps. 9. Moon's cusps—diagram.

##### 18. Heliacal rising and setting of Planets and Stars ... 254

1. Heliacal rising and setting of planets. 2. Days of rising and setting. 3. Planetary elongation for rising and setting. 4. Visibility corrections. 5. Computation of rising and setting. 6. Jupiter's rising and setting. 7. Venus: Rising and setting. 8. Rising and setting of a star. 9. Canopus: Rising.

##### 19. Conjunction of Planets ... 264

1. Types of planetary conjunctions. 2. Conjunction: Principle of computation. 3. Computation of conjunction.

##### 20. Conjunction of Stars and Planets ... 271

1. Conjunction of stars and planets. 2. Principle of planet-star conjunction. 3. Occultation of stars by planets. 4. Occultation of Rohiṇī by planets. 5. Occultation of stars by the Moon. 6. Time of star-planet conjunction.

#### V. INNOVATIVE TRENDS

##### 21. Novel Innovations ... 274

1. True longitude computation on the sphere of the zodiac. 2. Computation of True Moon. 3. Simplified astronomical procedures.

#### IV. OCCULTATION

##### 16. Eclipses ... 196

1. Cause stated in the Ṛgveda. 2. Cause of the lunar eclipse. 3. Lunar eclipse: Principle of computation. 4. Lunar eclipse computation: Vāsiṣṭha and Pauliṣa. 5. —Saurasiddhānta. 6. —Āryabhaṭīya. 7. —Āryabhaṭa's Midnight system. 8. —Emendation by Brahmagupta. 9. —Bhāskara I. 10. —Lalla. 11. —Bhāskara II. 12. —Karaṇaratna. 13. —Śrīpati. 14. —Vākyakaraṇa. 15. —Grahalāghava. 16. Lunar eclipse diagram: Vāsiṣṭha Pauliṣa. 17. —Āryabhaṭa's Midnight system. 18. —Bhāskara I. 19. —Lalla. 20. —Sūryasiddhānta. 21. —Bhāskara II. 22. —Karaṇaratna. 23. Solar eclipse: Computation: Pauliṣa. 24. —Romakasiddhānta. 25. —Saurasiddhānta. 26. —Āryabhaṭa's Midnight system. 27. —Bhāskara I. 28. —Lalla. 29. —Mahāsiddhānta. 30. —Bhāskara II. 31. —Karaṇaratna. 32. —Śrīpati. 33. —Grahalāghava. 34. —Solar eclipse diagram: Romakasiddhānta. 35. —Saurasiddhānta. 36. Colour of eclipses. 37. Conditions for non-prediction of eclipses. 38. —Inscriptional references: Lunar eclipses. 38. Solar eclipses.

##### 17. Phases of the Moon ... 241

1. Periodical appearance of the Moon. 2. Moon's luminosity. 3. Conditions of Moon's visibility. 4. Preliminaries for computation. 5. Visibility corrections: Ākṣa, Āyana and the Third. 6. Rising and setting of the Moon. 7. Moon's shadow. 8. Computation of Moon's cusps. 9. Moon's cusps—diagram.

##### 18. Heliacal rising and setting of Planets and Stars ... 254

1. Heliacal rising and setting of planets. 2. Days of rising and setting. 3. Planetary elongation for rising and setting. 4. Visibility corrections. 5. Computation of rising and setting. 6. Jupiter's rising and setting. 7. Venus: Rising and setting. 8. Rising and setting of a star. 9. Canopus: Rising.

##### 19. Conjunction of Planets ... 264

1. Types of planetary conjunctions. 2. Conjunction: Principle of computation. 3. Computation of conjunction.

##### 20. Conjunction of Stars and Planets ... 271

1. Conjunction of stars and planets. 2. Principle of planet-star conjunction. 3. Occultation of stars by planets. 4. Occultation of Rohiṇī by planets. 5. Occultation of stars by the Moon. 6. Time of star-planet conjunction.

#### V. INNOVATIVE TRENDS

##### 21. Novel Innovations ... 274

1. True longitude computation on the sphere of the zodiac. 2. Computation of True Moon. 3. Simplified astronomical procedures.

#### IV. OCCULTATION

##### 16. Eclipses ... 196

1. Cause stated in the Ṛgveda. 2. Cause of the lunar eclipse. 3. Lunar eclipse: Principle of computation. 4. Lunar eclipse computation: Vāsiṣṭha and Pauliṣa. 5. —Saurasiddhānta. 6. —Āryabhaṭīya. 7. —Āryabhaṭa's Midnight system. 8. —Emendation by Brahmagupta. 9. —Bhāskara I. 10. —Lalla. 11. —Bhāskara II. 12. —Karaṇaratna. 13. —Śrīpati. 14. —Vākyakaraṇa. 15. —Grahalāghava. 16. Lunar eclipse diagram: Vāsiṣṭha Pauliṣa. 17. —Āryabhaṭa's Midnight system. 18. —Bhāskara I. 19. —Lalla. 20. —Sūryasiddhānta. 21. —Bhāskara II. 22. —Karaṇaratna. 23. Solar eclipse: Computation: Pauliṣa. 24. —Romakasiddhānta. 25. —Saurasiddhānta. 26. —Āryabhaṭa's Midnight system. 27. —Bhāskara I. 28. —Lalla. 29. —Mahāsiddhānta. 30. —Bhāskara II. 31. —Karaṇaratna. 32. —Śrīpati. 33. —Grahalāghava. 34. —Solar eclipse diagram: Romakasiddhānta. 35. —Saurasiddhānta. 36. Colour of eclipses. 37. Conditions for non-prediction of eclipses. 38. —Inscriptional references: Lunar eclipses. 38. Solar eclipses.

##### 17. Phases of the Moon ... 241

1. Periodical appearance of the Moon. 2. Moon's luminosity. 3. Conditions of Moon's visibility. 4. Preliminaries for computation. 5. Visibility corrections: Ākṣa, Āyana and the Third. 6. Rising and setting of the Moon. 7. Moon's shadow. 8. Computation of Moon's cusps. 9. Moon's cusps—diagram.

##### 18. Heliacal rising and setting of Planets and Stars ... 254

1. Heliacal rising and setting of planets. 2. Days of rising and setting. 3. Planetary elongation for rising and setting. 4. Visibility corrections. 5. Computation of rising and setting. 6. Jupiter's rising and setting. 7. Venus: Rising and setting. 8. Rising and setting of a star. 9. Canopus: Rising.

##### 19. Conjunction of Planets ... 264

1. Types of planetary conjunctions. 2. Conjunction: Principle of computation. 3. Computation of conjunction.

##### 20. Conjunction of Stars and Planets ... 271

1. Conjunction of stars and planets. 2. Principle of planet-star conjunction. 3. Occultation of stars by planets. 4. Occultation of Rohiṇī by planets. 5. Occultation of stars by the Moon. 6. Time of star-planet conjunction.

#### V. INNOVATIVE TRENDS

##### 21. Novel Innovations ... 274

1. True longitude computation on the sphere of the zodiac. 2. Computation of True Moon. 3. Simplified astronomical procedures.

#### IV. OCCULTATION

##### 16. Eclipses ... 196

1. Cause stated in the Ṛgveda. 2. Cause of the lunar eclipse. 3. Lunar eclipse: Principle of computation. 4. Lunar eclipse computation: Vāsiṣṭha and Pauliṣa. 5. —Saurasiddhānta. 6. —Āryabhaṭīya. 7. —Āryabhaṭa's Midnight system. 8. —Emendation by Brahmagupta. 9. —Bhāskara I. 10. —Lalla. 11. —Bhāskara II. 12. —Karaṇaratna. 13. —Śrīpati. 14. —Vākyakaraṇa. 15. —Grahalāghava. 16. Lunar eclipse diagram: Vāsiṣṭha Pauliṣa. 17. —Āryabhaṭa's Midnight system. 18. —Bhāskara I. 19. —Lalla. 20. —Sūryasiddhānta. 21. —Bhāskara II. 22. —Karaṇaratna. 23. Solar eclipse: Computation: Pauliṣa. 24. —Romakasiddhānta. 25. —Saurasiddhānta. 26. —Āryabhaṭa's Midnight system. 27. —Bhāskara I. 28. —Lalla. 29. —Mahāsiddhānta. 30. —Bhāskara II. 31. —Karaṇaratna. 32. —Śrīpati. 33. —Grahalāghava. 34. —Solar eclipse diagram: Romakasiddhānta. 35. —Saurasiddhānta. 36. Colour of eclipses. 37. Conditions for non-prediction of eclipses. 38. —Inscriptional references: Lunar eclipses. 38. Solar eclipses.

##### 17. Phases of the Moon ... 241

1. Periodical appearance of the Moon. 2. Moon's luminosity. 3. Conditions of Moon's visibility. 4. Preliminaries for computation. 5. Visibility corrections: Ākṣa, Āyana and the Third. 6. Rising and setting of the Moon. 7. Moon's shadow. 8. Computation of Moon's cusps. 9. Moon's cusps—diagram.

##### 18. Heliacal rising and setting of Planets and Stars ... 254

1. Heliacal rising and setting of planets. 2. Days of rising and setting. 3. Planetary elongation for rising and setting. 4. Visibility corrections. 5. Computation of rising and setting. 6. Jupiter's rising and setting. 7. Venus: Rising and setting. 8. Rising and setting of a star. 9. Canopus: Rising.

##### 19. Conjunction of Planets ... 264

1. Types of planetary conjunctions. 2. Conjunction: Principle of computation. 3. Computation of conjunction.

##### 20. Conjunction of Stars and Planets ... 271

1. Conjunction of stars and planets. 2. Principle of planet-star conjunction. 3. Occultation of stars by planets. 4. Occultation of Rohiṇī by planets. 5. Occultation of stars by the Moon. 6. Time of star-planet conjunction.

#### V. INNOVATIVE TRENDS

##### 21. Novel Innovations ... 274

1. True longitude computation on the sphere of the zodiac. 2. Computation of True Moon. 3. Simplified astronomical procedures.



#### IV. OCCULTATION

##### 16. Eclipses ... 196

1. Cause stated in the Ṛgveda. 2. Cause of the lunar eclipse. 3. Lunar eclipse: Principle of computation. 4. Lunar eclipse computation: Vāsiṣṭha and Pauliṣa. 5. —Saurasiddhānta. 6. —Āryabhaṭīya. 7. —Āryabhaṭa's Midnight system. 8. —Emendation by Brahmagupta. 9. —Bhāskara I. 10. —Lalla. 11. —Bhāskara II. 12. —Karaṇaratna. 13. —Śrīpati. 14. —Vākyakaraṇa. 15. —Grahalāghava. 16. Lunar eclipse diagram: Vāsiṣṭha Pauliṣa. 17. —Āryabhaṭa's Midnight system. 18. —Bhāskara I. 19. —Lalla. 20. —Sūryasiddhānta. 21. —Bhāskara II. 22. —Karaṇaratna. 23. Solar eclipse: Computation: Pauliṣa. 24. —Romakasiddhānta. 25. —Saurasiddhānta. 26. —Āryabhaṭa's Midnight system. 27. —Bhāskara I. 28. —Lalla. 29. —Mahāsiddhānta. 30. —Bhāskara II. 31. —Karaṇaratna. 32. —Śrīpati. 33. —Grahalāghava. 34. —Solar eclipse diagram: Romakasiddhānta. 35. —Saurasiddhānta. 36. Colour of eclipses. 37. Conditions for non-prediction of eclipses. 38. —Inscriptional references: Lunar eclipses. 38. Solar eclipses.

##### 17. Phases of the Moon ... 241

1. Periodical appearance of the Moon. 2. Moon's luminosity. 3. Conditions of Moon's visibility. 4. Preliminaries for computation. 5. Visibility corrections: Ākṣa, Āyana and the Third. 6. Rising and setting of the Moon. 7. Moon's shadow. 8. Computation of Moon's cusps. 9. Moon's cusps—diagram.

##### 18. Heliacal rising and setting of Planets and Stars ... 254

1. Heliacal rising and setting of planets. 2. Days of rising and setting. 3. Planetary elongation for rising and setting. 4. Visibility corrections. 5. Computation of rising and setting. 6. Jupiter's rising and setting. 7. Venus: Rising and setting. 8. Rising and setting of a star. 9. Canopus: Rising.

##### 19. Conjunction of Planets ... 264

1. Types of planetary conjunctions. 2. Conjunction: Principle of computation. 3. Computation of conjunction.

##### 20. Conjunction of Stars and Planets ... 271

1. Conjunction of stars and planets. 2. Principle of planet-star conjunction. 3. Occultation of stars by planets. 4. Occultation of Rohiṇī by planets. 5. Occultation of stars by the Moon. 6. Time of star-planet conjunction.

#### V. INNOVATIVE TRENDS

##### 21. Novel Innovations ... 274

1. True longitude computation on the sphere of the zodiac. 2. Computation of True Moon. 3. Simplified astronomical procedures.

#### IV. OCCULTATION

##### 16. Eclipses ... 196

1. Cause stated in the Ṛgveda. 2. Cause of the lunar eclipse. 3. Lunar eclipse: Principle of computation. 4. Lunar eclipse computation: Vāsiṣṭha and Pauliṣa. 5. —Saurasiddhānta. 6. —Āryabhaṭīya. 7. —Āryabhaṭa's Midnight system. 8. —Emendation by Brahmagupta. 9. —Bhāskara I. 10. —Lalla. 11. —Bhāskara II. 12. —Karaṇaratna. 13. —Śrīpati. 14. —Vākyakaraṇa. 15. —Grahalāghava. 16. Lunar eclipse diagram: Vāsiṣṭha Pauliṣa. 17. —Āryabhaṭa's Midnight system. 18. —Bhāskara I. 19. —Lalla. 20. —Sūryasiddhānta. 21. —Bhāskara II. 22. —Karaṇaratna. 23. Solar eclipse: Computation: Pauliṣa. 24. —Romakasiddhānta. 25. —Saurasiddhānta. 26. —Āryabhaṭa's Midnight system. 27. —Bhāskara I. 28. —Lalla. 29. —Mahāsiddhānta. 30. —Bhāskara II. 31. —Karaṇaratna. 32. —Śrīpati. 33. —Grahalāghava. 34. —Solar eclipse diagram: Romakasiddhānta. 35. —Saurasiddhānta. 36. Colour of eclipses. 37. Conditions for non-prediction of eclipses. 38. —Inscriptional references: Lunar eclipses. 38. Solar eclipses.

##### 17. Phases of the Moon ... 241

1. Periodical appearance of the Moon. 2. Moon's luminosity. 3. Conditions of Moon's visibility. 4. Preliminaries for computation. 5. Visibility corrections: Ākṣa, Āyana and the Third. 6. Rising and setting of the Moon. 7. Moon's shadow. 8. Computation of Moon's cusps. 9. Moon's cusps—diagram.

##### 18. Heliacal rising and setting of Planets and Stars ... 254

1. Heliacal rising and setting of planets. 2. Days of rising and setting. 3. Planetary elongation for rising and setting. 4. Visibility corrections. 5. Computation of rising and setting. 6. Jupiter's rising and setting. 7. Venus: Rising and setting. 8. Rising and setting of a star. 9. Canopus: Rising.

##### 19. Conjunction of Planets ... 264

1. Types of planetary conjunctions. 2. Conjunction: Principle of computation. 3. Computation of conjunction.

##### 20. Conjunction of Stars and Planets ... 271

1. Conjunction of stars and planets. 2. Principle of planet-star conjunction. 3. Occultation of stars by planets. 4. Occultation of Rohiṇī by planets. 5. Occultation of stars by the Moon. 6. Time of star-planet conjunction.

#### V. INNOVATIVE TRENDS

##### 21. Novel Innovations ... 274

1. True longitude computation on the sphere of the zodiac. 2. Computation of True Moon. 3. Simplified astronomical procedures.

#### IV. OCCULTATION

##### 16. Eclipses ... 196

1. Cause stated in the Ṛgveda. 2. Cause of the lunar eclipse. 3. Lunar eclipse: Principle of computation. 4. Lunar eclipse computation: Vāsiṣṭha and Pauliṣa. 5. —Saurasiddhānta. 6. —Āryabhaṭīya. 7. —Āryabhaṭa's Midnight system. 8. —Emendation by Brahmagupta. 9. —Bhāskara I. 10. —Lalla. 11. —Bhāskara II. 12. —Karaṇaratna. 13. —Śrīpati. 14. —Vākyakaraṇa. 15. —Grahalāghava. 16. Lunar eclipse diagram: Vāsiṣṭha Pauliṣa. 17. —Āryabhaṭa's Midnight system. 18. —Bhāskara I. 19. —Lalla. 20. —Sūryasiddhānta. 21. —Bhāskara II. 22. —Karaṇaratna. 23. Solar eclipse: Computation: Pauliṣa. 24. —Romakasiddhānta. 25. —Saurasiddhānta. 26. —Āryabhaṭa's Midnight system. 27. —Bhāskara I. 28. —Lalla. 29. —Mahāsiddhānta. 30. —Bhāskara II. 31. —Karaṇaratna. 32. —Śrīpati. 33. —Grahalāghava. 34. —Solar eclipse diagram: Romakasiddhānta. 35. —Saurasiddhānta. 36. Colour of eclipses. 37. Conditions for non-prediction of eclipses. 38. —Inscriptional references: Lunar eclipses. 38. Solar eclipses.

##### 17. Phases of the Moon ... 241

1. Periodical appearance of the Moon. 2. Moon's luminosity. 3. Conditions of Moon's visibility. 4. Preliminaries for computation. 5. Visibility corrections: Ākṣa, Āyana and the Third. 6. Rising and setting of the Moon. 7. Moon's shadow. 8. Computation of Moon's cusps. 9. Moon's cusps—diagram.

##### 18. Heliacal rising and setting of Planets and Stars ... 254

1. Heliacal rising and setting of planets. 2. Days of rising and setting. 3. Planetary elongation for rising and setting. 4. Visibility corrections. 5. Computation of rising and setting. 6. Jupiter's rising and setting. 7. Venus: Rising and setting. 8. Rising and setting of a star. 9. Canopus: Rising.

##### 19. Conjunction of Planets ... 264

1. Types of planetary conjunctions. 2. Conjunction: Principle of computation. 3. Computation of conjunction.

##### 20. Conjunction of Stars and Planets ... 271

1. Conjunction of stars and planets. 2. Principle of planet-star conjunction. 3. Occultation of stars by planets. 4. Occultation of Rohiṇī by planets. 5. Occultation of stars by the Moon. 6. Time of star-planet conjunction.

#### V. INNOVATIVE TRENDS

##### 21. Novel Innovations ... 274

1. True longitude computation on the sphere of the zodiac. 2. Computation of True Moon. 3. Simplified astronomical procedures.

#### IV. OCCULTATION

##### 16. Eclipses ... 196

1. Cause stated in the Ṛgveda. 2. Cause of the lunar eclipse. 3. Lunar eclipse: Principle of computation. 4. Lunar eclipse computation: Vāsiṣṭha and Pauliṣa. 5. —Saurasiddhānta. 6. —Āryabhaṭīya. 7. —Āryabhaṭa's Midnight system. 8. —Emendation by Brahmagupta. 9. —Bhāskara I. 10. —Lalla. 11. —Bhāskara II. 12. —Karaṇaratna. 13. —Śrīpati. 14. —Vākyakaraṇa. 15. —Grahalāghava. 16. Lunar eclipse diagram: Vāsiṣṭha Pauliṣa. 17. —Āryabhaṭa's Midnight system. 18. —Bhāskara I. 19. —Lalla. 20. —Sūryasiddhānta. 21. —Bhāskara II. 22. —Karaṇaratna. 23. Solar eclipse: Computation: Pauliṣa. 24. —Romakasiddhānta. 25. —Saurasiddhānta. 26. —Āryabhaṭa's Midnight system. 27. —Bhāskara I. 28. —Lalla. 29. —Mahāsiddhānta. 30. —Bhāskara II. 31. —Karaṇaratna. 32. —Śrīpati. 33. —Grahalāghava. 34. —Solar eclipse diagram: Romakasiddhānta. 35. —Saurasiddhānta. 36. Colour of eclipses. 37. Conditions for non-prediction of eclipses. 38. —Inscriptional references: Lunar eclipses. 38. Solar eclipses.

##### 17. Phases of the Moon ... 241

1. Periodical appearance of the Moon. 2. Moon's luminosity. 3. Conditions of Moon's visibility. 4. Preliminaries for computation. 5. Visibility corrections: Ākṣa, Āyana and the Third. 6. Rising and setting of the Moon. 7. Moon's shadow. 8. Computation of Moon's cusps. 9. Moon's cusps—diagram.

##### 18. Heliacal rising and setting of Planets and Stars ... 254

1. Heliacal rising and setting of planets. 2. Days of rising and setting. 3. Planetary elongation for rising and setting. 4. Visibility corrections. 5. Computation of rising and setting. 6. Jupiter's rising and setting. 7. Venus: Rising and setting. 8. Rising and setting of a star. 9. Canopus: Rising.

##### 19. Conjunction of Planets ... 264

1. Types of planetary conjunctions. 2. Conjunction: Principle of computation. 3. Computation of conjunction.

##### 20. Conjunction of Stars and Planets ... 271

1. Conjunction of stars and planets. 2. Principle of planet-star conjunction. 3. Occultation of stars by planets. 4. Occultation of Rohiṇī by planets. 5. Occultation of stars by the Moon. 6. Time of star-planet conjunction.

#### V. INNOVATIVE TRENDS

##### 21. Novel Innovations ... 274

1. True longitude computation on the sphere of the zodiac. 2. Computation of True Moon. 3. Simplified astronomical procedures.

#### IV. OCCULTATION

##### 16. Eclipses ... 196

1. Cause stated in the Ṛgveda. 2. Cause of the lunar eclipse. 3. Lunar eclipse: Principle of computation. 4. Lunar eclipse computation: Vāsiṣṭha and Pauliṣa. 5. —Saurasiddhānta. 6. —Āryabhaṭīya. 7. —Āryabhaṭa's Midnight system. 8. —Emendation by Brahmagupta. 9. —Bhāskara I. 10. —Lalla. 11. —Bhāskara II. 12. —Karaṇaratna. 13. —Śrīpati. 14. —Vākyakaraṇa. 15. —Grahalāghava. 16. Lunar eclipse diagram: Vāsiṣṭha Pauliṣa. 17. —Āryabhaṭa's Midnight system. 18. —Bhāskara I. 19. —Lalla. 20. —Sūryasiddhānta. 21. —Bhāskara II. 22. —Karaṇaratna. 23. Solar eclipse: Computation: Pauliṣa. 24. —Romakasiddhānta. 25. —Saurasiddhānta. 26. —Āryabhaṭa's Midnight system. 27. —Bhāskara I. 28. —Lalla. 29. —Mahāsiddhānta. 30. —Bhāskara II. 31. —Karaṇaratna. 32. —Śrīpati. 33. —Grahalāghava. 34. —Solar eclipse diagram: Romakasiddhānta. 35. —Saurasiddhānta. 36. Colour of eclipses. 37. Conditions for non-prediction of eclipses. 38. —Inscriptional references: Lunar eclipses. 38. Solar eclipses.

##### 17. Phases of the Moon ... 241

1. Periodical appearance of the Moon. 2. Moon's luminosity. 3. Conditions of Moon's visibility. 4. Preliminaries for computation. 5. Visibility corrections: Ākṣa, Āyana and the Third. 6. Rising and setting of the Moon. 7. Moon's shadow. 8. Computation of Moon's cusps. 9. Moon's cusps—diagram.

##### 18. Heliacal rising and setting of Planets and Stars ... 254

1. Heliacal rising and setting of planets. 2. Days of rising and setting. 3. Planetary elongation for rising and setting. 4. Visibility corrections. 5. Computation of rising and setting. 6. Jupiter's rising and setting. 7. Venus: Rising and setting. 8. Rising and setting of a star. 9. Canopus: Rising.

##### 19. Conjunction of Planets ... 264

1. Types of planetary conjunctions. 2. Conjunction: Principle of computation. 3. Computation of conjunction.

##### 20. Conjunction of Stars and Planets ... 271

1. Conjunction of stars and planets. 2. Principle of planet-star conjunction. 3. Occultation of stars by planets. 4. Occultation of Rohiṇī by planets. 5. Occultation of stars by the Moon. 6. Time of star-planet conjunction.

#### V. INNOVATIVE TRENDS

##### 21. Novel Innovations ... 274

1. True longitude computation on the sphere of the zodiac. 2. Computation of True Moon. 3. Simplified astronomical procedures.

#### IV. OCCULTATION

##### 16. Eclipses ... 196

1. Cause stated in the Ṛgveda. 2. Cause of the lunar eclipse. 3. Lunar eclipse: Principle of computation. 4. Lunar eclipse computation: Vāsiṣṭha and Pauliṣa. 5. —Saurasiddhānta. 6. —Āryabhaṭīya. 7. —Āryabhaṭa's Midnight system. 8. —Emendation by Brahmagupta. 9. —Bhāskara I. 10. —Lalla. 11. —Bhāskara II. 12. —Karaṇaratna. 13. —Śrīpati. 14. —Vākyakaraṇa. 15. —Grahalāghava. 16. Lunar eclipse diagram: Vāsiṣṭha Pauliṣa. 17. —Āryabhaṭa's Midnight system. 18. —Bhāskara I. 19. —Lalla. 20. —Sūryasiddhānta. 21. —Bhāskara II. 22. —Karaṇaratna. 23. Solar eclipse: Computation: Pauliṣa. 24. —Romakasiddhānta. 25. —Saurasiddhānta. 26. —Āryabhaṭa's Midnight system. 27. —Bhāskara I. 28. —Lalla. 29. —Mahāsiddhānta. 30. —Bhāskara II. 31. —Karaṇaratna. 32. —Śrīpati. 33. —Grahalāghava. 34. —Solar eclipse diagram: Romakasiddhānta. 35. —Saurasiddhānta. 36. Colour of eclipses. 37. Conditions for non-prediction of eclipses. 38. —Inscriptional references: Lunar eclipses. 38. Solar eclipses.

##### 17. Phases of the Moon ... 241

1. Periodical appearance of the Moon. 2. Moon's luminosity. 3. Conditions of Moon's visibility. 4. Preliminaries for computation. 5. Visibility corrections: Ākṣa, Āyana and the Third. 6. Rising and setting of the Moon. 7. Moon's shadow. 8. Computation of Moon's cusps. 9. Moon's cusps—diagram.

##### 18. Heliacal rising and setting of Planets and Stars ... 254

1. Heliacal rising and setting of planets. 2. Days of rising and setting. 3. Planetary elongation for rising and setting. 4. Visibility corrections. 5. Computation of rising and setting. 6. Jupiter's rising and setting. 7. Venus: Rising and setting. 8. Rising and setting of a star. 9. Canopus: Rising.

##### 19. Conjunction of Planets ... 264

1. Types of planetary conjunctions. 2. Conjunction: Principle of computation. 3. Computation of conjunction.

##### 20. Conjunction of Stars and Planets ... 271

1. Conjunction of stars and planets. 2. Principle of planet-star conjunction. 3. Occultation of stars by planets. 4. Occultation of Rohiṇī by planets. 5. Occultation of stars by the Moon. 6. Time of star-planet conjunction.

#### V. INNOVATIVE TRENDS

##### 21. Novel Innovations ... 274

1. True longitude computation on the sphere of the zodiac. 2. Computation of True Moon. 3. Simplified astronomical procedures.

#### IV. OCCULTATION

##### 16. Eclipses ... 196

1. Cause stated in the Ṛgveda. 2. Cause of the lunar eclipse. 3. Lunar eclipse: Principle of computation. 4. Lunar eclipse computation: Vāsiṣṭha and Pauliṣa. 5. —Saurasiddhānta. 6. —Āryabhaṭīya. 7. —Āryabhaṭa's Midnight system. 8. —Emendation by Brahmagupta. 9. —Bhāskara I. 10. —Lalla. 11. —Bhāskara II. 12. —Karaṇaratna. 13. —Śrīpati. 14. —Vākyakaraṇa. 15. —Grahalāghava. 16. Lunar eclipse diagram: Vāsiṣṭha Pauliṣa. 17. —Āryabhaṭa's Midnight system. 18. —Bhāskara I. 19. —Lalla. 20. —Sūryasiddhānta. 21. —Bhāskara II. 22. —Karaṇaratna. 23. Solar eclipse: Computation: Pauliṣa. 24. —Romakasiddhānta. 25. —Saurasiddhānta. 26. —Āryabhaṭa's Midnight system. 27. —Bhāskara I. 28. —Lalla. 29. —Mahāsiddhānta. 30. —Bhāskara II. 31. —Karaṇaratna. 32. —Śrīpati. 33. —Grahalāghava. 34. —Solar eclipse diagram: Romakasiddhānta. 35. —Saurasiddhānta. 36. Colour of eclipses. 37. Conditions for non-prediction of eclipses. 38. —Inscriptional references: Lunar eclipses. 38. Solar eclipses.

##### 17. Phases of the Moon ... 241

1. Periodical appearance of the Moon. 2. Moon's luminosity. 3. Conditions of Moon's visibility. 4. Preliminaries for computation. 5. Visibility corrections: Ākṣa, Āyana and the Third. 6. Rising and setting of the Moon. 7. Moon's shadow. 8. Computation of Moon's cusps. 9. Moon's cusps—diagram.

##### 18. Heliacal rising and setting of Planets and Stars ... 254

1. Heliacal rising and setting of planets. 2. Days of rising and setting. 3. Planetary elongation for rising and setting. 4. Visibility corrections. 5. Computation of rising and setting. 6. Jupiter's rising and setting. 7. Venus: Rising and setting. 8. Rising and setting of a star. 9. Canopus: Rising.

##### 19. Conjunction of Planets ... 264

1. Types of planetary conjunctions. 2. Conjunction: Principle of computation. 3. Computation of conjunction.

##### 20. Conjunction of Stars and Planets ... 271

1. Conjunction of stars and planets. 2. Principle of planet-star conjunction. 3. Occultation of stars by planets. 4. Occultation of Rohiṇī by planets. 5. Occultation of stars by the Moon. 6. Time of star-planet conjunction.

#### V. INNOVATIVE TRENDS

##### 21. Novel Innovations ... 274

1. True longitude computation on the sphere of the zodiac. 2. Computation of True Moon. 3. Simplified astronomical procedures.

#### IV. OCCULTATION

##### 16. Eclipses ... 196

1. Cause stated in the Ṛgveda. 2. Cause of the lunar eclipse. 3. Lunar eclipse: Principle of computation. 4. Lunar eclipse computation: Vāsiṣṭha and Pauliṣa. 5. —Saurasiddhānta. 6. —Āryabhaṭīya. 7. —Āryabhaṭa's Midnight system. 8. —Emendation by Brahmagupta. 9. —Bhāskara I. 10. —Lalla. 11. —Bhāskara II. 12. —Karaṇaratna. 13. —Śrīpati. 14. —Vākyakaraṇa. 15. —Grahalāghava. 16. Lunar eclipse diagram: Vāsiṣṭha Pauliṣa. 17. —Āryabhaṭa's Midnight system. 18. —Bhāskara I. 19. —Lalla. 20. —Sūryasiddhānta. 21. —Bhāskara II. 22. —Karaṇaratna. 23. Solar eclipse: Computation: Pauliṣa. 24. —Romakasiddhānta. 25. —Saurasiddhānta. 26. —Āryabhaṭa's Midnight system. 27. —Bhāskara I. 28. —Lalla. 29. —Mahāsiddhānta. 30. —Bhāskara II. 31. —Karaṇaratna. 32. —Śrīpati. 33. —Grahalāghava. 34. —Solar eclipse diagram: Romakasiddhānta. 35. —Saurasiddhānta. 36. Colour of eclipses. 37. Conditions for non-prediction of eclipses. 38. —Inscriptional references: Lunar eclipses. 38. Solar eclipses.

##### 17. Phases of the Moon ... 241

1. Periodical appearance of the Moon. 2. Moon's luminosity. 3. Conditions of Moon's visibility. 4. Preliminaries for computation. 5. Visibility corrections: Ākṣa, Āyana and the Third. 6. Rising and setting of the Moon. 7. Moon's shadow. 8. Computation of Moon's cusps. 9. Moon's cusps—diagram.

##### 18. Heliacal rising and setting of Planets and Stars ... 254

1. Heliacal rising and setting of planets. 2. Days of rising and setting. 3. Planetary elongation for rising and setting. 4. Visibility corrections. 5. Computation of rising and setting. 6. Jupiter's rising and setting. 7. Venus: Rising and setting. 8. Rising and setting of a star. 9. Canopus: Rising.

##### 19. Conjunction of Planets ... 264

1. Types of planetary conjunctions. 2. Conjunction: Principle of computation. 3. Computation of conjunction.

##### 20. Conjunction of Stars and Planets ... 271

1. Conjunction of stars and planets. 2. Principle of planet-star conjunction. 3. Occultation of stars by planets. 4. Occultation of Rohiṇī by planets. 5. Occultation of stars by the Moon. 6. Time of star-planet conjunction.

#### V. INNOVATIVE TRENDS

##### 21. Novel Innovations ... 274

1. True longitude computation on the sphere of the zodiac. 2. Computation of True Moon. 3. Simplified astronomical procedures.



#### IV. OCCULTATION

##### 16. Eclipses ... 196

1. Cause stated in the Ṛgveda. 2. Cause of the lunar eclipse. 3. Lunar eclipse: Principle of computation. 4. Lunar eclipse computation: Vāsiṣṭha and Pauliṣa. 5. —Saurasiddhānta. 6. —Āryabhaṭīya. 7. —Āryabhaṭa's Midnight system. 8. —Emendation by Brahmagupta. 9. —Bhāskara I. 10. —Lalla. 11. —Bhāskara II. 12. —Karaṇaratna. 13. —Śrīpati. 14. —Vākyakaraṇa. 15. —Grahalāghava. 16. Lunar eclipse diagram: Vāsiṣṭha Pauliṣa. 17. —Āryabhaṭa's Midnight system. 18. —Bhāskara I. 19. —Lalla. 20. —Sūryasiddhānta. 21. —Bhāskara II. 22. —Karaṇaratna. 23. Solar eclipse: Computation: Pauliṣa. 24. —Romakasiddhānta. 25. —Saurasiddhānta. 26. —Āryabhaṭa's Midnight system. 27. —Bhāskara I. 28. —Lalla. 29. —Mahāsiddhānta. 30. —Bhāskara II. 31. —Karaṇaratna. 32. —Śrīpati. 33. —Grahalāghava. 34. —Solar eclipse diagram: Romakasiddhānta. 35. —Saurasiddhānta. 36. Colour of eclipses. 37. Conditions for non-prediction of eclipses. 38. —Inscriptional references: Lunar eclipses. 38. Solar eclipses.

##### 17. Phases of the Moon ... 241

1. Periodical appearance of the Moon. 2. Moon's luminosity. 3. Conditions of Moon's visibility. 4. Preliminaries for computation. 5. Visibility corrections: Ākṣa, Āyana and the Third. 6. Rising and setting of the Moon. 7. Moon's shadow. 8. Computation of Moon's cusps. 9. Moon's cusps—diagram.

##### 18. Heliacal rising and setting of Planets and Stars ... 254

1. Heliacal rising and setting of planets. 2. Days of rising and setting. 3. Planetary elongation for rising and setting. 4. Visibility corrections. 5. Computation of rising and setting. 6. Jupiter's rising and setting. 7. Venus: Rising and setting. 8. Rising and setting of a star. 9. Canopus: Rising.

##### 19. Conjunction of Planets ... 264

1. Types of planetary conjunctions. 2. Conjunction: Principle of computation. 3. Computation of conjunction.

##### 20. Conjunction of Stars and Planets ... 271

1. Conjunction of stars and planets. 2. Principle of planet-star conjunction. 3. Occultation of stars by planets. 4. Occultation of Rohiṇī by planets. 5. Occultation of stars by the Moon. 6. Time of star-planet conjunction.

#### V. INNOVATIVE TRENDS

##### 21. Novel Innovations ... 274

1. True longitude computation on the sphere of the zodiac. 2. Computation of True Moon. 3. Simplified astronomical procedures.

#### IV. OCCULTATION

##### 16. Eclipses ... 196

1. Cause stated in the Ṛgveda. 2. Cause of the lunar eclipse. 3. Lunar eclipse: Principle of computation. 4. Lunar eclipse computation: Vāsiṣṭha and Pauliṣa. 5. —Saurasiddhānta. 6. —Āryabhaṭīya. 7. —Āryabhaṭa's Midnight system. 8. —Emendation by Brahmagupta. 9. —Bhāskara I. 10. —Lalla. 11. —Bhāskara II. 12. —Karaṇaratna. 13. —Śrīpati. 14. —Vākyakaraṇa. 15. —Grahalāghava. 16. Lunar eclipse diagram: Vāsiṣṭha Pauliṣa. 17. —Āryabhaṭa's Midnight system. 18. —Bhāskara I. 19. —Lalla. 20. —Sūryasiddhānta. 21. —Bhāskara II. 22. —Karaṇaratna. 23. Solar eclipse: Computation: Pauliṣa. 24. —Romakasiddhānta. 25. —Saurasiddhānta. 26. —Āryabhaṭa's Midnight system. 27. —Bhāskara I. 28. —Lalla. 29. —Mahāsiddhānta. 30. —Bhāskara II. 31. —Karaṇaratna. 32. —Śrīpati. 33. —Grahalāghava. 34. —Solar eclipse diagram: Romakasiddhānta. 35. —Saurasiddhānta. 36. Colour of eclipses. 37. Conditions for non-prediction of eclipses. 38. —Inscriptional references: Lunar eclipses. 38. Solar eclipses.

##### 17. Phases of the Moon ... 241

1. Periodical appearance of the Moon. 2. Moon's luminosity. 3. Conditions of Moon's visibility. 4. Preliminaries for computation. 5. Visibility corrections: Ākṣa, Āyana and the Third. 6. Rising and setting of the Moon. 7. Moon's shadow. 8. Computation of Moon's cusps. 9. Moon's cusps—diagram.

##### 18. Heliacal rising and setting of Planets and Stars ... 254

1. Heliacal rising and setting of planets. 2. Days of rising and setting. 3. Planetary elongation for rising and setting. 4. Visibility corrections. 5. Computation of rising and setting. 6. Jupiter's rising and setting. 7. Venus: Rising and setting. 8. Rising and setting of a star. 9. Canopus: Rising.

##### 19. Conjunction of Planets ... 264

1. Types of planetary conjunctions. 2. Conjunction: Principle of computation. 3. Computation of conjunction.

##### 20. Conjunction of Stars and Planets ... 271

1. Conjunction of stars and planets. 2. Principle of planet-star conjunction. 3. Occultation of stars by planets. 4. Occultation of Rohiṇī by planets. 5. Occultation of stars by the Moon. 6. Time of star-planet conjunction.

#### V. INNOVATIVE TRENDS

##### 21. Novel Innovations ... 274

1. True longitude computation on the sphere of the zodiac. 2. Computation of True Moon. 3. Simplified astronomical procedures.

#### IV. OCCULTATION

##### 16. Eclipses ... 196

1. Cause stated in the Ṛgveda. 2. Cause of the lunar eclipse. 3. Lunar eclipse: Principle of computation. 4. Lunar eclipse computation: Vāsiṣṭha and Pauliṣa. 5. —Saurasiddhānta. 6. —Āryabhaṭīya. 7. —Āryabhaṭa's Midnight system. 8. —Emendation by Brahmagupta. 9. —Bhāskara I. 10. —Lalla. 11. —Bhāskara II. 12. —Karaṇaratna. 13. —Śrīpati. 14. —Vākyakaraṇa. 15. —Grahalāghava. 16. Lunar eclipse diagram: Vāsiṣṭha Pauliṣa. 17. —Āryabhaṭa's Midnight system. 18. —Bhāskara I. 19. —Lalla. 20. —Sūryasiddhānta. 21. —Bhāskara II. 22. —Karaṇaratna. 23. Solar eclipse: Computation: Pauliṣa. 24. —Romakasiddhānta. 25. —Saurasiddhānta. 26. —Āryabhaṭa's Midnight system. 27. —Bhāskara I. 28. —Lalla. 29. —Mahāsiddhānta. 30. —Bhāskara II. 31. —Karaṇaratna. 32. —Śrīpati. 33. —Grahalāghava. 34. —Solar eclipse diagram: Romakasiddhānta. 35. —Saurasiddhānta. 36. Colour of eclipses. 37. Conditions for non-prediction of eclipses. 38. —Inscriptional references: Lunar eclipses. 38. Solar eclipses.

##### 17. Phases of the Moon ... 241

1. Periodical appearance of the Moon. 2. Moon's luminosity. 3. Conditions of Moon's visibility. 4. Preliminaries for computation. 5. Visibility corrections: Ākṣa, Āyana and the Third. 6. Rising and setting of the Moon. 7. Moon's shadow. 8. Computation of Moon's cusps. 9. Moon's cusps—diagram.

##### 18. Heliacal rising and setting of Planets and Stars ... 254

1. Heliacal rising and setting of planets. 2. Days of rising and setting. 3. Planetary elongation for rising and setting. 4. Visibility corrections. 5. Computation of rising and setting. 6. Jupiter's rising and setting. 7. Venus: Rising and setting. 8. Rising and setting of a star. 9. Canopus: Rising.

##### 19. Conjunction of Planets ... 264

1. Types of planetary conjunctions. 2. Conjunction: Principle of computation. 3. Computation of conjunction.

##### 20. Conjunction of Stars and Planets ... 271

1. Conjunction of stars and planets. 2. Principle of planet-star conjunction. 3. Occultation of stars by planets. 4. Occultation of Rohiṇī by planets. 5. Occultation of stars by the Moon. 6. Time of star-planet conjunction.

#### V. INNOVATIVE TRENDS

##### 21. Novel Innovations ... 274

1. True longitude computation on the sphere of the zodiac. 2. Computation of True Moon. 3. Simplified astronomical procedures.

#### IV. OCCULTATION

##### 16. Eclipses ... 196

1. Cause stated in the Ṛgveda. 2. Cause of the lunar eclipse. 3. Lunar eclipse: Principle of computation. 4. Lunar eclipse computation: Vāsiṣṭha and Pauliṣa. 5. —Saurasiddhānta. 6. —Āryabhaṭīya. 7. —Āryabhaṭa's Midnight system. 8. —Emendation by Brahmagupta. 9. —Bhāskara I. 10. —Lalla. 11. —Bhāskara II. 12. —Karaṇaratna. 13. —Śrīpati. 14. —Vākyakaraṇa. 15. —Grahalāghava. 16. Lunar eclipse diagram: Vāsiṣṭha Pauliṣa. 17. —Āryabhaṭa's Midnight system. 18. —Bhāskara I. 19. —Lalla. 20. —Sūryasiddhānta. 21. —Bhāskara II. 22. —Karaṇaratna. 23. Solar eclipse: Computation: Pauliṣa. 24. —Romakasiddhānta. 25. —Saurasiddhānta. 26. —Āryabhaṭa's Midnight system. 27. —Bhāskara I. 28. —Lalla. 29. —Mahāsiddhānta. 30. —Bhāskara II. 31. —Karaṇaratna. 32. —Śrīpati. 33. —Grahalāghava. 34. —Solar eclipse diagram: Romakasiddhānta. 35. —Saurasiddhānta. 36. Colour of eclipses. 37. Conditions for non-prediction of eclipses. 38. —Inscriptional references: Lunar eclipses. 38. Solar eclipses.

##### 17. Phases of the Moon ... 241

1. Periodical appearance of the Moon. 2. Moon's luminosity. 3. Conditions of Moon's visibility. 4. Preliminaries for computation. 5. Visibility corrections: Ākṣa, Āyana and the Third. 6. Rising and setting of the Moon. 7. Moon's shadow. 8. Computation of Moon's cusps. 9. Moon's cusps—diagram.

##### 18. Heliacal rising and setting of Planets and Stars ... 254

1. Heliacal rising and setting of planets. 2. Days of rising and setting. 3. Planetary elongation for rising and setting. 4. Visibility corrections. 5. Computation of rising and setting. 6. Jupiter's rising and setting. 7. Venus: Rising and setting. 8. Rising and setting of a star. 9. Canopus: Rising.

##### 19. Conjunction of Planets ... 264

1. Types of planetary conjunctions. 2. Conjunction: Principle of computation. 3. Computation of conjunction.

##### 20. Conjunction of Stars and Planets ... 271

1. Conjunction of stars and planets. 2. Principle of planet-star conjunction. 3. Occultation of stars by planets. 4. Occultation of Rohiṇī by planets. 5. Occultation of stars by the Moon. 6. Time of star-planet conjunction.

#### V. INNOVATIVE TRENDS

##### 21. Novel Innovations ... 274

1. True longitude computation on the sphere of the zodiac. 2. Computation of True Moon. 3. Simplified astronomical procedures.

#### IV. OCCULTATION

##### 16. Eclipses ... 196

1. Cause stated in the Ṛgveda. 2. Cause of the lunar eclipse. 3. Lunar eclipse: Principle of computation. 4. Lunar eclipse computation: Vāsiṣṭha and Pauliṣa. 5. —Saurasiddhānta. 6. —Āryabhaṭīya. 7. —Āryabhaṭa's Midnight system. 8. —Emendation by Brahmagupta. 9. —Bhāskara I. 10. —Lalla. 11. —Bhāskara II. 12. —Karaṇaratna. 13. —Śrīpati. 14. —Vākyakaraṇa. 15. —Grahalāghava. 16. Lunar eclipse diagram: Vāsiṣṭha Pauliṣa. 17. —Āryabhaṭa's Midnight system. 18. —Bhāskara I. 19. —Lalla. 20. —Sūryasiddhānta. 21. —Bhāskara II. 22. —Karaṇaratna. 23. Solar eclipse: Computation: Pauliṣa. 24. —Romakasiddhānta. 25. —Saurasiddhānta. 26. —Āryabhaṭa's Midnight system. 27. —Bhāskara I. 28. —Lalla. 29. —Mahāsiddhānta. 30. —Bhāskara II. 31. —Karaṇaratna. 32. —Śrīpati. 33. —Grahalāghava. 34. —Solar eclipse diagram: Romakasiddhānta. 35. —Saurasiddhānta. 36. Colour of eclipses. 37. Conditions for non-prediction of eclipses. 38. —Inscriptional references: Lunar eclipses. 38. Solar eclipses.

##### 17. Phases of the Moon ... 241

1. Periodical appearance of the Moon. 2. Moon's luminosity. 3. Conditions of Moon's visibility. 4. Preliminaries for computation. 5. Visibility corrections: Ākṣa, Āyana and the Third. 6. Rising and setting of the Moon. 7. Moon's shadow. 8. Computation of Moon's cusps. 9. Moon's cusps—diagram.

##### 18. Heliacal rising and setting of Planets and Stars ... 254

1. Heliacal rising and setting of planets. 2. Days of rising and setting. 3. Planetary elongation for rising and setting. 4. Visibility corrections. 5. Computation of rising and setting. 6. Jupiter's rising and setting. 7. Venus: Rising and setting. 8. Rising and setting of a star. 9. Canopus: Rising.

##### 19. Conjunction of Planets ... 264

1. Types of planetary conjunctions. 2. Conjunction: Principle of computation. 3. Computation of conjunction.

##### 20. Conjunction of Stars and Planets ... 271

1. Conjunction of stars and planets. 2. Principle of planet-star conjunction. 3. Occultation of stars by planets. 4. Occultation of Rohiṇī by planets. 5. Occultation of stars by the Moon. 6. Time of star-planet conjunction.

#### V. INNOVATIVE TRENDS

##### 21. Novel Innovations ... 274

1. True longitude computation on the sphere of the zodiac. 2. Computation of True Moon. 3. Simplified astronomical procedures.

#### IV. OCCULTATION

##### 16. Eclipses ... 196

1. Cause stated in the Ṛgveda. 2. Cause of the lunar eclipse. 3. Lunar eclipse: Principle of computation. 4. Lunar eclipse computation: Vāsiṣṭha and Pauliṣa. 5. —Saurasiddhānta. 6. —Āryabhaṭīya. 7. —Āryabhaṭa's Midnight system. 8. —Emendation by Brahmagupta. 9. —Bhāskara I. 10. —Lalla. 11. —Bhāskara II. 12. —Karaṇaratna. 13. —Śrīpati. 14. —Vākyakaraṇa. 15. —Grahalāghava. 16. Lunar eclipse diagram: Vāsiṣṭha Pauliṣa. 17. —Āryabhaṭa's Midnight system. 18. —Bhāskara I. 19. —Lalla. 20. —Sūryasiddhānta. 21. —Bhāskara II. 22. —Karaṇaratna. 23. Solar eclipse: Computation: Pauliṣa. 24. —Romakasiddhānta. 25. —Saurasiddhānta. 26. —Āryabhaṭa's Midnight system. 27. —Bhāskara I. 28. —Lalla. 29. —Mahāsiddhānta. 30. —Bhāskara II. 31. —Karaṇaratna. 32. —Śrīpati. 33. —Grahalāghava. 34. —Solar eclipse diagram: Romakasiddhānta. 35. —Saurasiddhānta. 36. Colour of eclipses. 37. Conditions for non-prediction of eclipses. 38. —Inscriptional references: Lunar eclipses. 38. Solar eclipses.

##### 17. Phases of the Moon ... 241

1. Periodical appearance of the Moon. 2. Moon's luminosity. 3. Conditions of Moon's visibility. 4. Preliminaries for computation. 5. Visibility corrections: Ākṣa, Āyana and the Third. 6. Rising and setting of the Moon. 7. Moon's shadow. 8. Computation of Moon's cusps. 9. Moon's cusps—diagram.

##### 18. Heliacal rising and setting of Planets and Stars ... 254

1. Heliacal rising and setting of planets. 2. Days of rising and setting. 3. Planetary elongation for rising and setting. 4. Visibility corrections. 5. Computation of rising and setting. 6. Jupiter's rising and setting. 7. Venus: Rising and setting. 8. Rising and setting of a star. 9. Canopus: Rising.

##### 19. Conjunction of Planets ... 264

1. Types of planetary conjunctions. 2. Conjunction: Principle of computation. 3. Computation of conjunction.

##### 20. Conjunction of Stars and Planets ... 271

1. Conjunction of stars and planets. 2. Principle of planet-star conjunction. 3. Occultation of stars by planets. 4. Occultation of Rohiṇī by planets. 5. Occultation of stars by the Moon. 6. Time of star-planet conjunction.

#### V. INNOVATIVE TRENDS

##### 21. Novel Innovations ... 274

1. True longitude computation on the sphere of the zodiac. 2. Computation of True Moon. 3. Simplified astronomical procedures.

#### IV. OCCULTATION

##### 16. Eclipses ... 196

1. Cause stated in the Ṛgveda. 2. Cause of the lunar eclipse. 3. Lunar eclipse: Principle of computation. 4. Lunar eclipse computation: Vāsiṣṭha and Pauliṣa. 5. —Saurasiddhānta. 6. —Āryabhaṭīya. 7. —Āryabhaṭa's Midnight system. 8. —Emendation by Brahmagupta. 9. —Bhāskara I. 10. —Lalla. 11. —Bhāskara II. 12. —Karaṇaratna. 13. —Śrīpati. 14. —Vākyakaraṇa. 15. —Grahalāghava. 16. Lunar eclipse diagram: Vāsiṣṭha Pauliṣa. 17. —Āryabhaṭa's Midnight system. 18. —Bhāskara I. 19. —Lalla. 20. —Sūryasiddhānta. 21. —Bhāskara II. 22. —Karaṇaratna. 23. Solar eclipse: Computation: Pauliṣa. 24. —Romakasiddhānta. 25. —Saurasiddhānta. 26. —Āryabhaṭa's Midnight system. 27. —Bhāskara I. 28. —Lalla. 29. —Mahāsiddhānta. 30. —Bhāskara II. 31. —Karaṇaratna. 32. —Śrīpati. 33. —Grahalāghava. 34. —Solar eclipse diagram: Romakasiddhānta. 35. —Saurasiddhānta. 36. Colour of eclipses. 37. Conditions for non-prediction of eclipses. 38. —Inscriptional references: Lunar eclipses. 38. Solar eclipses.

##### 17. Phases of the Moon ... 241

1. Periodical appearance of the Moon. 2. Moon's luminosity. 3. Conditions of Moon's visibility. 4. Preliminaries for computation. 5. Visibility corrections: Ākṣa, Āyana and the Third. 6. Rising and setting of the Moon. 7. Moon's shadow. 8. Computation of Moon's cusps. 9. Moon's cusps—diagram.

##### 18. Heliacal rising and setting of Planets and Stars ... 254

1. Heliacal rising and setting of planets. 2. Days of rising and setting. 3. Planetary elongation for rising and setting. 4. Visibility corrections. 5. Computation of rising and setting. 6. Jupiter's rising and setting. 7. Venus: Rising and setting. 8. Rising and setting of a star. 9. Canopus: Rising.

##### 19. Conjunction of Planets ... 264

1. Types of planetary conjunctions. 2. Conjunction: Principle of computation. 3. Computation of conjunction.

##### 20. Conjunction of Stars and Planets ... 271

1. Conjunction of stars and planets. 2. Principle of planet-star conjunction. 3. Occultation of stars by planets. 4. Occultation of Rohiṇī by planets. 5. Occultation of stars by the Moon. 6. Time of star-planet conjunction.

#### V. INNOVATIVE TRENDS

##### 21. Novel Innovations ... 274

1. True longitude computation on the sphere of the zodiac. 2. Computation of True Moon. 3. Simplified astronomical procedures.

#### IV. OCCULTATION

##### 16. Eclipses ... 196

1. Cause stated in the Ṛgveda. 2. Cause of the lunar eclipse. 3. Lunar eclipse: Principle of computation. 4. Lunar eclipse computation: Vāsiṣṭha and Pauliṣa. 5. —Saurasiddhānta. 6. —Āryabhaṭīya. 7. —Āryabhaṭa's Midnight system. 8. —Emendation by Brahmagupta. 9. —Bhāskara I. 10. —Lalla. 11. —Bhāskara II. 12. —Karaṇaratna. 13. —Śrīpati. 14. —Vākyakaraṇa. 15. —Grahalāghava. 16. Lunar eclipse diagram: Vāsiṣṭha Pauliṣa. 17. —Āryabhaṭa's Midnight system. 18. —Bhāskara I. 19. —Lalla. 20. —Sūryasiddhānta. 21. —Bhāskara II. 22. —Karaṇaratna. 23. Solar eclipse: Computation: Pauliṣa. 24. —Romakasiddhānta. 25. —Saurasiddhānta. 26. —Āryabhaṭa's Midnight system. 27. —Bhāskara I. 28. —Lalla. 29. —Mahāsiddhānta. 30. —Bhāskara II. 31. —Karaṇaratna. 32. —Śrīpati. 33. —Grahalāghava. 34. —Solar eclipse diagram: Romakasiddhānta. 35. —Saurasiddhānta. 36. Colour of eclipses. 37. Conditions for non-prediction of eclipses. 38. —Inscriptional references: Lunar eclipses. 38. Solar eclipses.

##### 17. Phases of the Moon ... 241

1. Periodical appearance of the Moon. 2. Moon's luminosity. 3. Conditions of Moon's visibility. 4. Preliminaries for computation. 5. Visibility corrections: Ākṣa, Āyana and the Third. 6. Rising and setting of the Moon. 7. Moon's shadow. 8. Computation of Moon's cusps. 9. Moon's cusps—diagram.

##### 18. Heliacal rising and setting of Planets and Stars ... 254

1. Heliacal rising and setting of planets. 2. Days of rising and setting. 3. Planetary elongation for rising and setting. 4. Visibility corrections. 5. Computation of rising and setting. 6. Jupiter's rising and setting. 7. Venus: Rising and setting. 8. Rising and setting of a star. 9. Canopus: Rising.

##### 19. Conjunction of Planets ... 264

1. Types of planetary conjunctions. 2. Conjunction: Principle of computation. 3. Computation of conjunction.

##### 20. Conjunction of Stars and Planets ... 271

1. Conjunction of stars and planets. 2. Principle of planet-star conjunction. 3. Occultation of stars by planets. 4. Occultation of Rohiṇī by planets. 5. Occultation of stars by the Moon. 6. Time of star-planet conjunction.

#### V. INNOVATIVE TRENDS

##### 21. Novel Innovations ... 274

1. True longitude computation on the sphere of the zodiac. 2. Computation of True Moon. 3. Simplified astronomical procedures.



#### IV. OCCULTATION

##### 16. Eclipses ... 196

1. Cause stated in the Ṛgveda. 2. Cause of the lunar eclipse. 3. Lunar eclipse: Principle of computation. 4. Lunar eclipse computation: Vāsiṣṭha and Pauliṣa. 5. —Saurasiddhānta. 6. —Āryabhaṭīya. 7. —Āryabhaṭa's Midnight system. 8. —Emendation by Brahmagupta. 9. —Bhāskara I. 10. —Lalla. 11. —Bhāskara II. 12. —Karaṇaratna. 13. —Śrīpati. 14. —Vākyakaraṇa. 15. —Grahalāghava. 16. Lunar eclipse diagram: Vāsiṣṭha Pauliṣa. 17. —Āryabhaṭa's Midnight system. 18. —Bhāskara I. 19. —Lalla. 20. —Sūryasiddhānta. 21. —Bhāskara II. 22. —Karaṇaratna. 23. Solar eclipse: Computation: Pauliṣa. 24. —Romakasiddhānta. 25. —Saurasiddhānta. 26. —Āryabhaṭa's Midnight system. 27. —Bhāskara I. 28. —Lalla. 29. —Mahāsiddhānta. 30. —Bhāskara II. 31. —Karaṇaratna. 32. —Śrīpati. 33. —Grahalāghava. 34. —Solar eclipse diagram: Romakasiddhānta. 35. —Saurasiddhānta. 36. Colour of eclipses. 37. Conditions for non-prediction of eclipses. 38. —Inscriptional references: Lunar eclipses. 38. Solar eclipses.

##### 17. Phases of the Moon ... 241

1. Periodical appearance of the Moon. 2. Moon's luminosity. 3. Conditions of Moon's visibility. 4. Preliminaries for computation. 5. Visibility corrections: Ākṣa, Āyana and the Third. 6. Rising and setting of the Moon. 7. Moon's shadow. 8. Computation of Moon's cusps. 9. Moon's cusps—diagram.

##### 18. Heliacal rising and setting of Planets and Stars ... 254

1. Heliacal rising and setting of planets. 2. Days of rising and setting. 3. Planetary elongation for rising and setting. 4. Visibility corrections. 5. Computation of rising and setting. 6. Jupiter's rising and setting. 7. Venus: Rising and setting. 8. Rising and setting of a star. 9. Canopus: Rising.

##### 19. Conjunction of Planets ... 264

1. Types of planetary conjunctions. 2. Conjunction: Principle of computation. 3. Computation of conjunction.

##### 20. Conjunction of Stars and Planets ... 271

1. Conjunction of stars and planets. 2. Principle of planet-star conjunction. 3. Occultation of stars by planets. 4. Occultation of Rohiṇī by planets. 5. Occultation of stars by the Moon. 6. Time of star-planet conjunction.

#### V. INNOVATIVE TRENDS

##### 21. Novel Innovations ... 274

1. True longitude computation on the sphere of the zodiac. 2. Computation of True Moon. 3. Simplified astronomical procedures.

#### IV. OCCULTATION

##### 16. Eclipses ... 196

1. Cause stated in the Ṛgveda. 2. Cause of the lunar eclipse. 3. Lunar eclipse: Principle of computation. 4. Lunar eclipse computation: Vāsiṣṭha and Pauliṣa. 5. —Saurasiddhānta. 6. —Āryabhaṭīya. 7. —Āryabhaṭa's Midnight system. 8. —Emendation by Brahmagupta. 9. —Bhāskara I. 10. —Lalla. 11. —Bhāskara II. 12. —Karaṇaratna. 13. —Śrīpati. 14. —Vākyakaraṇa. 15. —Grahalāghava. 16. Lunar eclipse diagram: Vāsiṣṭha Pauliṣa. 17. —Āryabhaṭa's Midnight system. 18. —Bhāskara I. 19. —Lalla. 20. —Sūryasiddhānta. 21. —Bhāskara II. 22. —Karaṇaratna. 23. Solar eclipse: Computation: Pauliṣa. 24. —Romakasiddhānta. 25. —Saurasiddhānta. 26. —Āryabhaṭa's Midnight system. 27. —Bhāskara I. 28. —Lalla. 29. —Mahāsiddhānta. 30. —Bhāskara II. 31. —Karaṇaratna. 32. —Śrīpati. 33. —Grahalāghava. 34. —Solar eclipse diagram: Romakasiddhānta. 35. —Saurasiddhānta. 36. Colour of eclipses. 37. Conditions for non-prediction of eclipses. 38. —Inscriptional references: Lunar eclipses. 38. Solar eclipses.

##### 17. Phases of the Moon ... 241

1. Periodical appearance of the Moon. 2. Moon's luminosity. 3. Conditions of Moon's visibility. 4. Preliminaries for computation. 5. Visibility corrections: Ākṣa, Āyana and the Third. 6. Rising and setting of the Moon. 7. Moon's shadow. 8. Computation of Moon's cusps. 9. Moon's cusps—diagram.

##### 18. Heliacal rising and setting of Planets and Stars ... 254

1. Heliacal rising and setting of planets. 2. Days of rising and setting. 3. Planetary elongation for rising and setting. 4. Visibility corrections. 5. Computation of rising and setting. 6. Jupiter's rising and setting. 7. Venus: Rising and setting. 8. Rising and setting of a star. 9. Canopus: Rising.

##### 19. Conjunction of Planets ... 264

1. Types of planetary conjunctions. 2. Conjunction: Principle of computation. 3. Computation of conjunction.

##### 20. Conjunction of Stars and Planets ... 271

1. Conjunction of stars and planets. 2. Principle of planet-star conjunction. 3. Occultation of stars by planets. 4. Occultation of Rohiṇī by planets. 5. Occultation of stars by the Moon. 6. Time of star-planet conjunction.

#### V. INNOVATIVE TRENDS

##### 21. Novel Innovations ... 274

1. True longitude computation on the sphere of the zodiac. 2. Computation of True Moon. 3. Simplified astronomical procedures.

#### IV. OCCULTATION

##### 16. Eclipses ... 196

1. Cause stated in the Ṛgveda. 2. Cause of the lunar eclipse. 3. Lunar eclipse: Principle of computation. 4. Lunar eclipse computation: Vāsiṣṭha and Pauliṣa. 5. —Saurasiddhānta. 6. —Āryabhaṭīya. 7. —Āryabhaṭa's Midnight system. 8. —Emendation by Brahmagupta. 9. —Bhāskara I. 10. —Lalla. 11. —Bhāskara II. 12. —Karaṇaratna. 13. —Śrīpati. 14. —Vākyakaraṇa. 15. —Grahalāghava. 16. Lunar eclipse diagram: Vāsiṣṭha Pauliṣa. 17. —Āryabhaṭa's Midnight system. 18. —Bhāskara I. 19. —Lalla. 20. —Sūryasiddhānta. 21. —Bhāskara II. 22. —Karaṇaratna. 23. Solar eclipse: Computation: Pauliṣa. 24. —Romakasiddhānta. 25. —Saurasiddhānta. 26. —Āryabhaṭa's Midnight system. 27. —Bhāskara I. 28. —Lalla. 29. —Mahāsiddhānta. 30. —Bhāskara II. 31. —Karaṇaratna. 32. —Śrīpati. 33. —Grahalāghava. 34. —Solar eclipse diagram: Romakasiddhānta. 35. —Saurasiddhānta. 36. Colour of eclipses. 37. Conditions for non-prediction of eclipses. 38. —Inscriptional references: Lunar eclipses. 38. Solar eclipses.

##### 17. Phases of the Moon ... 241

1. Periodical appearance of the Moon. 2. Moon's luminosity. 3. Conditions of Moon's visibility. 4. Preliminaries for computation. 5. Visibility corrections: Ākṣa, Āyana and the Third. 6. Rising and setting of the Moon. 7. Moon's shadow. 8. Computation of Moon's cusps. 9. Moon's cusps—diagram.

##### 18. Heliacal rising and setting of Planets and Stars ... 254

1. Heliacal rising and setting of planets. 2. Days of rising and setting. 3. Planetary elongation for rising and setting. 4. Visibility corrections. 5. Computation of rising and setting. 6. Jupiter's rising and setting. 7. Venus: Rising and setting. 8. Rising and setting of a star. 9. Canopus: Rising.

##### 19. Conjunction of Planets ... 264

1. Types of planetary conjunctions. 2. Conjunction: Principle of computation. 3. Computation of conjunction.

##### 20. Conjunction of Stars and Planets ... 271

1. Conjunction of stars and planets. 2. Principle of planet-star conjunction. 3. Occultation of stars by planets. 4. Occultation of Rohiṇī by planets. 5. Occultation of stars by the Moon. 6. Time of star-planet conjunction.

#### V. INNOVATIVE TRENDS

##### 21. Novel Innovations ... 274

1. True longitude computation on the sphere of the zodiac. 2. Computation of True Moon. 3. Simplified astronomical procedures.

#### IV. OCCULTATION

##### 16. Eclipses ... 196

1. Cause stated in the Ṛgveda. 2. Cause of the lunar eclipse. 3. Lunar eclipse: Principle of computation. 4. Lunar eclipse computation: Vāsiṣṭha and Pauliṣa. 5. —Saurasiddhānta. 6. —Āryabhaṭīya. 7. —Āryabhaṭa's Midnight system. 8. —Emendation by Brahmagupta. 9. —Bhāskara I. 10. —Lalla. 11. —Bhāskara II. 12. —Karaṇaratna. 13. —Śrīpati. 14. —Vākyakaraṇa. 15. —Grahalāghava. 16. Lunar eclipse diagram: Vāsiṣṭha Pauliṣa. 17. —Āryabhaṭa's Midnight system. 18. —Bhāskara I. 19. —Lalla. 20. —Sūryasiddhānta. 21. —Bhāskara II. 22. —Karaṇaratna. 23. Solar eclipse: Computation: Pauliṣa. 24. —Romakasiddhānta. 25. —Saurasiddhānta. 26. —Āryabhaṭa's Midnight system. 27. —Bhāskara I. 28. —Lalla. 29. —Mahāsiddhānta. 30. —Bhāskara II. 31. —Karaṇaratna. 32. —Śrīpati. 33. —Grahalāghava. 34. —Solar eclipse diagram: Romakasiddhānta. 35. —Saurasiddhānta. 36. Colour of eclipses. 37. Conditions for non-prediction of eclipses. 38. —Inscriptional references: Lunar eclipses. 38. Solar eclipses.

##### 17. Phases of the Moon ... 241

1. Periodical appearance of the Moon. 2. Moon's luminosity. 3. Conditions of Moon's visibility. 4. Preliminaries for computation. 5. Visibility corrections: Ākṣa, Āyana and the Third. 6. Rising and setting of the Moon. 7. Moon's shadow. 8. Computation of Moon's cusps. 9. Moon's cusps—diagram.

##### 18. Heliacal rising and setting of Planets and Stars ... 254

1. Heliacal rising and setting of planets. 2. Days of rising and setting. 3. Planetary elongation for rising and setting. 4. Visibility corrections. 5. Computation of rising and setting. 6. Jupiter's rising and setting. 7. Venus: Rising and setting. 8. Rising and setting of a star. 9. Canopus: Rising.

##### 19. Conjunction of Planets ... 264

1. Types of planetary conjunctions. 2. Conjunction: Principle of computation. 3. Computation of conjunction.

##### 20. Conjunction of Stars and Planets ... 271

1. Conjunction of stars and planets. 2. Principle of planet-star conjunction. 3. Occultation of stars by planets. 4. Occultation of Rohiṇī by planets. 5. Occultation of stars by the Moon. 6. Time of star-planet conjunction.

#### V. INNOVATIVE TRENDS

##### 21. Novel Innovations ... 274

1. True longitude computation on the sphere of the zodiac. 2. Computation of True Moon. 3. Simplified astronomical procedures.

#### IV. OCCULTATION

##### 16. Eclipses ... 196

1. Cause stated in the Ṛgveda. 2. Cause of the lunar eclipse. 3. Lunar eclipse: Principle of computation. 4. Lunar eclipse computation: Vāsiṣṭha and Pauliṣa. 5. —Saurasiddhānta. 6. —Āryabhaṭīya. 7. —Āryabhaṭa's Midnight system. 8. —Emendation by Brahmagupta. 9. —Bhāskara I. 10. —Lalla. 11. —Bhāskara II. 12. —Karaṇaratna. 13. —Śrīpati. 14. —Vākyakaraṇa. 15. —Grahalāghava. 16. Lunar eclipse diagram: Vāsiṣṭha Pauliṣa. 17. —Āryabhaṭa's Midnight system. 18. —Bhāskara I. 19. —Lalla. 20. —Sūryasiddhānta. 21. —Bhāskara II. 22. —Karaṇaratna. 23. Solar eclipse: Computation: Pauliṣa. 24. —Romakasiddhānta. 25. —Saurasiddhānta. 26. —Āryabhaṭa's Midnight system. 27. —Bhāskara I. 28. —Lalla. 29. —Mahāsiddhānta. 30. —Bhāskara II. 31. —Karaṇaratna. 32. —Śrīpati. 33. —Grahalāghava. 34. —Solar eclipse diagram: Romakasiddhānta. 35. —Saurasiddhānta. 36. Colour of eclipses. 37. Conditions for non-prediction of eclipses. 38. —Inscriptional references: Lunar eclipses. 38. Solar eclipses.

##### 17. Phases of the Moon ... 241

1. Periodical appearance of the Moon. 2. Moon's luminosity. 3. Conditions of Moon's visibility. 4. Preliminaries for computation. 5. Visibility corrections: Ākṣa, Āyana and the Third. 6. Rising and setting of the Moon. 7. Moon's shadow. 8. Computation of Moon's cusps. 9. Moon's cusps—diagram.

##### 18. Heliacal rising and setting of Planets and Stars ... 254

1. Heliacal rising and setting of planets. 2. Days of rising and setting. 3. Planetary elongation for rising and setting. 4. Visibility corrections. 5. Computation of rising and setting. 6. Jupiter's rising and setting. 7. Venus: Rising and setting. 8. Rising and setting of a star. 9. Canopus: Rising.

##### 19. Conjunction of Planets ... 264

1. Types of planetary conjunctions. 2. Conjunction: Principle of computation. 3. Computation of conjunction.

##### 20. Conjunction of Stars and Planets ... 271

1. Conjunction of stars and planets. 2. Principle of planet-star conjunction. 3. Occultation of stars by planets. 4. Occultation of Rohiṇī by planets. 5. Occultation of stars by the Moon. 6. Time of star-planet conjunction.

#### V. INNOVATIVE TRENDS

##### 21. Novel Innovations ... 274

1. True longitude computation on the sphere of the zodiac. 2. Computation of True Moon. 3. Simplified astronomical procedures.

#### IV. OCCULTATION

##### 16. Eclipses ... 196

1. Cause stated in the Ṛgveda. 2. Cause of the lunar eclipse. 3. Lunar eclipse: Principle of computation. 4. Lunar eclipse computation: Vāsiṣṭha and Pauliṣa. 5. —Saurasiddhānta. 6. —Āryabhaṭīya. 7. —Āryabhaṭa's Midnight system. 8. —Emendation by Brahmagupta. 9. —Bhāskara I. 10. —Lalla. 11. —Bhāskara II. 12. —Karaṇaratna. 13. —Śrīpati. 14. —Vākyakaraṇa. 15. —Grahalāghava. 16. Lunar eclipse diagram: Vāsiṣṭha Pauliṣa. 17. —Āryabhaṭa's Midnight system. 18. —Bhāskara I. 19. —Lalla. 20. —Sūryasiddhānta. 21. —Bhāskara II. 22. —Karaṇaratna. 23. Solar eclipse: Computation: Pauliṣa. 24. —Romakasiddhānta. 25. —Saurasiddhānta. 26. —Āryabhaṭa's Midnight system. 27. —Bhāskara I. 28. —Lalla. 29. —Mahāsiddhānta. 30. —Bhāskara II. 31. —Karaṇaratna. 32. —Śrīpati. 33. —Grahalāghava. 34. —Solar eclipse diagram: Romakasiddhānta. 35. —Saurasiddhānta. 36. Colour of eclipses. 37. Conditions for non-prediction of eclipses. 38. —Inscriptional references: Lunar eclipses. 38. Solar eclipses.

##### 17. Phases of the Moon ... 241

1. Periodical appearance of the Moon. 2. Moon's luminosity. 3. Conditions of Moon's visibility. 4. Preliminaries for computation. 5. Visibility corrections: Ākṣa, Āyana and the Third. 6. Rising and setting of the Moon. 7. Moon's shadow. 8. Computation of Moon's cusps. 9. Moon's cusps—diagram.

##### 18. Heliacal rising and setting of Planets and Stars ... 254

1. Heliacal rising and setting of planets. 2. Days of rising and setting. 3. Planetary elongation for rising and setting. 4. Visibility corrections. 5. Computation of rising and setting. 6. Jupiter's rising and setting. 7. Venus: Rising and setting. 8. Rising and setting of a star. 9. Canopus: Rising.

##### 19. Conjunction of Planets ... 264

1. Types of planetary conjunctions. 2. Conjunction: Principle of computation. 3. Computation of conjunction.

##### 20. Conjunction of Stars and Planets ... 271

1. Conjunction of stars and planets. 2. Principle of planet-star conjunction. 3. Occultation of stars by planets. 4. Occultation of Rohiṇī by planets. 5. Occultation of stars by the Moon. 6. Time of star-planet conjunction.

#### V. INNOVATIVE TRENDS

##### 21. Novel Innovations ... 274

1. True longitude computation on the sphere of the zodiac. 2. Computation of True Moon. 3. Simplified astronomical procedures.

#### IV. OCCULTATION

##### 16. Eclipses ... 196

1. Cause stated in the Ṛgveda. 2. Cause of the lunar eclipse. 3. Lunar eclipse: Principle of computation. 4. Lunar eclipse computation: Vāsiṣṭha and Pauliṣa. 5. —Saurasiddhānta. 6. —Āryabhaṭīya. 7. —Āryabhaṭa's Midnight system. 8. —Emendation by Brahmagupta. 9. —Bhāskara I. 10. —Lalla. 11. —Bhāskara II. 12. —Karaṇaratna. 13. —Śrīpati. 14. —Vākyakaraṇa. 15. —Grahalāghava. 16. Lunar eclipse diagram: Vāsiṣṭha Pauliṣa. 17. —Āryabhaṭa's Midnight system. 18. —Bhāskara I. 19. —Lalla. 20. —Sūryasiddhānta. 21. —Bhāskara II. 22. —Karaṇaratna. 23. Solar eclipse: Computation: Pauliṣa. 24. —Romakasiddhānta. 25. —Saurasiddhānta. 26. —Āryabhaṭa's Midnight system. 27. —Bhāskara I. 28. —Lalla. 29. —Mahāsiddhānta. 30. —Bhāskara II. 31. —Karaṇaratna. 32. —Śrīpati. 33. —Grahalāghava. 34. —Solar eclipse diagram: Romakasiddhānta. 35. —Saurasiddhānta. 36. Colour of eclipses. 37. Conditions for non-prediction of eclipses. 38. —Inscriptional references: Lunar eclipses. 38. Solar eclipses.

##### 17. Phases of the Moon ... 241

1. Periodical appearance of the Moon. 2. Moon's luminosity. 3. Conditions of Moon's visibility. 4. Preliminaries for computation. 5. Visibility corrections: Ākṣa, Āyana and the Third. 6. Rising and setting of the Moon. 7. Moon's shadow. 8. Computation of Moon's cusps. 9. Moon's cusps—diagram.

##### 18. Heliacal rising and setting of Planets and Stars ... 254

1. Heliacal rising and setting of planets. 2. Days of rising and setting. 3. Planetary elongation for rising and setting. 4. Visibility corrections. 5. Computation of rising and setting. 6. Jupiter's rising and setting. 7. Venus: Rising and setting. 8. Rising and setting of a star. 9. Canopus: Rising.

##### 19. Conjunction of Planets ... 264

1. Types of planetary conjunctions. 2. Conjunction: Principle of computation. 3. Computation of conjunction.

##### 20. Conjunction of Stars and Planets ... 271

1. Conjunction of stars and planets. 2. Principle of planet-star conjunction. 3. Occultation of stars by planets. 4. Occultation of Rohiṇī by planets. 5. Occultation of stars by the Moon. 6. Time of star-planet conjunction.

#### V. INNOVATIVE TRENDS

##### 21. Novel Innovations ... 274

1. True longitude computation on the sphere of the zodiac. 2. Computation of True Moon. 3. Simplified astronomical procedures.

#### IV. OCCULTATION

##### 16. Eclipses ... 196

1. Cause stated in the Ṛgveda. 2. Cause of the lunar eclipse. 3. Lunar eclipse: Principle of computation. 4. Lunar eclipse computation: Vāsiṣṭha and Pauliṣa. 5. —Saurasiddhānta. 6. —Āryabhaṭīya. 7. —Āryabhaṭa's Midnight system. 8. —Emendation by Brahmagupta. 9. —Bhāskara I. 10. —Lalla. 11. —Bhāskara II. 12. —Karaṇaratna. 13. —Śrīpati. 14. —Vākyakaraṇa. 15. —Grahalāghava. 16. Lunar eclipse diagram: Vāsiṣṭha Pauliṣa. 17. —Āryabhaṭa's Midnight system. 18. —Bhāskara I. 19. —Lalla. 20. —Sūryasiddhānta. 21. —Bhāskara II. 22. —Karaṇaratna. 23. Solar eclipse: Computation: Pauliṣa. 24. —Romakasiddhānta. 25. —Saurasiddhānta. 26. —Āryabhaṭa's Midnight system. 27. —Bhāskara I. 28. —Lalla. 29. —Mahāsiddhānta. 30. —Bhāskara II. 31. —Karaṇaratna. 32. —Śrīpati. 33. —Grahalāghava. 34. —Solar eclipse diagram: Romakasiddhānta. 35. —Saurasiddhānta. 36. Colour of eclipses. 37. Conditions for non-prediction of eclipses. 38. —Inscriptional references: Lunar eclipses. 38. Solar eclipses.

##### 17. Phases of the Moon ... 241

1. Periodical appearance of the Moon. 2. Moon's luminosity. 3. Conditions of Moon's visibility. 4. Preliminaries for computation. 5. Visibility corrections: Ākṣa, Āyana and the Third. 6. Rising and setting of the Moon. 7. Moon's shadow. 8. Computation of Moon's cusps. 9. Moon's cusps—diagram.

##### 18. Heliacal rising and setting of Planets and Stars ... 254

1. Heliacal rising and setting of planets. 2. Days of rising and setting. 3. Planetary elongation for rising and setting. 4. Visibility corrections. 5. Computation of rising and setting. 6. Jupiter's rising and setting. 7. Venus: Rising and setting. 8. Rising and setting of a star. 9. Canopus: Rising.

##### 19. Conjunction of Planets ... 264

1. Types of planetary conjunctions. 2. Conjunction: Principle of computation. 3. Computation of conjunction.

##### 20. Conjunction of Stars and Planets ... 271

1. Conjunction of stars and planets. 2. Principle of planet-star conjunction. 3. Occultation of stars by planets. 4. Occultation of Rohiṇī by planets. 5. Occultation of stars by the Moon. 6. Time of star-planet conjunction.

#### V. INNOVATIVE TRENDS

##### 21. Novel Innovations ... 274

1. True longitude computation on the sphere of the zodiac. 2. Computation of True Moon. 3. Simplified astronomical procedures.



#### IV. OCCULTATION

##### 16. Eclipses ... 196

1. Cause stated in the Ṛgveda. 2. Cause of the lunar eclipse. 3. Lunar eclipse: Principle of computation. 4. Lunar eclipse computation: Vāsiṣṭha and Pauliṣa. 5. —Saurasiddhānta. 6. —Āryabhaṭīya. 7. —Āryabhaṭa's Midnight system. 8. —Emendation by Brahmagupta. 9. —Bhāskara I. 10. —Lalla. 11. —Bhāskara II. 12. —Karaṇaratna. 13. —Śrīpati. 14. —Vākyakaraṇa. 15. —Grahalāghava. 16. Lunar eclipse diagram: Vāsiṣṭha Pauliṣa. 17. —Āryabhaṭa's Midnight system. 18. —Bhāskara I. 19. —Lalla. 20. —Sūryasiddhānta. 21. —Bhāskara II. 22. —Karaṇaratna. 23. Solar eclipse: Computation: Pauliṣa. 24. —Romakasiddhānta. 25. —Saurasiddhānta. 26. —Āryabhaṭa's Midnight system. 27. —Bhāskara I. 28. —Lalla. 29. —Mahāsiddhānta. 30. —Bhāskara II. 31. —Karaṇaratna. 32. —Śrīpati. 33. —Grahalāghava. 34. —Solar eclipse diagram: Romakasiddhānta. 35. —Saurasiddhānta. 36. Colour of eclipses. 37. Conditions for non-prediction of eclipses. 38. —Inscriptional references: Lunar eclipses. 38. Solar eclipses.

##### 17. Phases of the Moon ... 241

1. Periodical appearance of the Moon. 2. Moon's luminosity. 3. Conditions of Moon's visibility. 4. Preliminaries for computation. 5. Visibility corrections: Ākṣa, Āyana and the Third. 6. Rising and setting of the Moon. 7. Moon's shadow. 8. Computation of Moon's cusps. 9. Moon's cusps—diagram.

##### 18. Heliacal rising and setting of Planets and Stars ... 254

1. Heliacal rising and setting of planets. 2. Days of rising and setting. 3. Planetary elongation for rising and setting. 4. Visibility corrections. 5. Computation of rising and setting. 6. Jupiter's rising and setting. 7. Venus: Rising and setting. 8. Rising and setting of a star. 9. Canopus: Rising.

##### 19. Conjunction of Planets ... 264

1. Types of planetary conjunctions. 2. Conjunction: Principle of computation. 3. Computation of conjunction.

##### 20. Conjunction of Stars and Planets ... 271

1. Conjunction of stars and planets. 2. Principle of planet-star conjunction. 3. Occultation of stars by planets. 4. Occultation of Rohiṇī by planets. 5. Occultation of stars by the Moon. 6. Time of star-planet conjunction.

#### V. INNOVATIVE TRENDS

##### 21. Novel Innovations ... 274

1. True longitude computation on the sphere of the zodiac. 2. Computation of True Moon. 3. Simplified astronomical procedures.

#### IV. OCCULTATION

##### 16. Eclipses ... 196

1. Cause stated in the Ṛgveda. 2. Cause of the lunar eclipse. 3. Lunar eclipse: Principle of computation. 4. Lunar eclipse computation: Vāsiṣṭha and Pauliṣa. 5. —Saurasiddhānta. 6. —Āryabhaṭīya. 7. —Āryabhaṭa's Midnight system. 8. —Emendation by Brahmagupta. 9. —Bhāskara I. 10. —Lalla. 11. —Bhāskara II. 12. —Karaṇaratna. 13. —Śrīpati. 14. —Vākyakaraṇa. 15. —Grahalāghava. 16. Lunar eclipse diagram: Vāsiṣṭha Pauliṣa. 17. —Āryabhaṭa's Midnight system. 18. —Bhāskara I. 19. —Lalla. 20. —Sūryasiddhānta. 21. —Bhāskara II. 22. —Karaṇaratna. 23. Solar eclipse: Computation: Pauliṣa. 24. —Romakasiddhānta. 25. —Saurasiddhānta. 26. —Āryabhaṭa's Midnight system. 27. —Bhāskara I. 28. —Lalla. 29. —Mahāsiddhānta. 30. —Bhāskara II. 31. —Karaṇaratna. 32. —Śrīpati. 33. —Grahalāghava. 34. —Solar eclipse diagram: Romakasiddhānta. 35. —Saurasiddhānta. 36. Colour of eclipses. 37. Conditions for non-prediction of eclipses. 38. —Inscriptional references: Lunar eclipses. 38. Solar eclipses.

##### 17. Phases of the Moon ... 241

1. Periodical appearance of the Moon. 2. Moon's luminosity. 3. Conditions of Moon's visibility. 4. Preliminaries for computation. 5. Visibility corrections: Ākṣa, Āyana and the Third. 6. Rising and setting of the Moon. 7. Moon's shadow. 8. Computation of Moon's cusps. 9. Moon's cusps—diagram.

##### 18. Heliacal rising and setting of Planets and Stars ... 254

1. Heliacal rising and setting of planets. 2. Days of rising and setting. 3. Planetary elongation for rising and setting. 4. Visibility corrections. 5. Computation of rising and setting. 6. Jupiter's rising and setting. 7. Venus: Rising and setting. 8. Rising and setting of a star. 9. Canopus: Rising.

##### 19. Conjunction of Planets ... 264

1. Types of planetary conjunctions. 2. Conjunction: Principle of computation. 3. Computation of conjunction.

##### 20. Conjunction of Stars and Planets ... 271

1. Conjunction of stars and planets. 2. Principle of planet-star conjunction. 3. Occultation of stars by planets. 4. Occultation of Rohiṇī by planets. 5. Occultation of stars by the Moon. 6. Time of star-planet conjunction.

#### V. INNOVATIVE TRENDS

##### 21. Novel Innovations ... 274

1. True longitude computation on the sphere of the zodiac. 2. Computation of True Moon. 3. Simplified astronomical procedures.

#### IV. OCCULTATION

##### 16. Eclipses ... 196

1. Cause stated in the Ṛgveda. 2. Cause of the lunar eclipse. 3. Lunar eclipse: Principle of computation. 4. Lunar eclipse computation: Vāsiṣṭha and Pauliṣa. 5. —Saurasiddhānta. 6. —Āryabhaṭīya. 7. —Āryabhaṭa's Midnight system. 8. —Emendation by Brahmagupta. 9. —Bhāskara I. 10. —Lalla. 11. —Bhāskara II. 12. —Karaṇaratna. 13. —Śrīpati. 14. —Vākyakaraṇa. 15. —Grahalāghava. 16. Lunar eclipse diagram: Vāsiṣṭha Pauliṣa. 17. —Āryabhaṭa's Midnight system. 18. —Bhāskara I. 19. —Lalla. 20. —Sūryasiddhānta. 21. —Bhāskara II. 22. —Karaṇaratna. 23. Solar eclipse: Computation: Pauliṣa. 24. —Romakasiddhānta. 25. —Saurasiddhānta. 26. —Āryabhaṭa's Midnight system. 27. —Bhāskara I. 28. —Lalla. 29. —Mahāsiddhānta. 30. —Bhāskara II. 31. —Karaṇaratna. 32. —Śrīpati. 33. —Grahalāghava. 34. —Solar eclipse diagram: Romakasiddhānta. 35. —Saurasiddhānta. 36. Colour of eclipses. 37. Conditions for non-prediction of eclipses. 38. —Inscriptional references: Lunar eclipses. 38. Solar eclipses.

##### 17. Phases of the Moon ... 241

1. Periodical appearance of the Moon. 2. Moon's luminosity. 3. Conditions of Moon's visibility. 4. Preliminaries for computation. 5. Visibility corrections: Ākṣa, Āyana and the Third. 6. Rising and setting of the Moon. 7. Moon's shadow. 8. Computation of Moon's cusps. 9. Moon's cusps—diagram.

##### 18. Heliacal rising and setting of Planets and Stars ... 254

1. Heliacal rising and setting of planets. 2. Days of rising and setting. 3. Planetary elongation for rising and setting. 4. Visibility corrections. 5. Computation of rising and setting. 6. Jupiter's rising and setting. 7. Venus: Rising and setting. 8. Rising and setting of a star. 9. Canopus: Rising.

##### 19. Conjunction of Planets ... 264

1. Types of planetary conjunctions. 2. Conjunction: Principle of computation. 3. Computation of conjunction.

##### 20. Conjunction of Stars and Planets ... 271

1. Conjunction of stars and planets. 2. Principle of planet-star conjunction. 3. Occultation of stars by planets. 4. Occultation of Rohiṇī by planets. 5. Occultation of stars by the Moon. 6. Time of star-planet conjunction.

#### V. INNOVATIVE TRENDS

##### 21. Novel Innovations ... 274

1. True longitude computation on the sphere of the zodiac. 2. Computation of True Moon. 3. Simplified astronomical procedures.

#### IV. OCCULTATION

##### 16. Eclipses ... 196

1. Cause stated in the Ṛgveda. 2. Cause of the lunar eclipse. 3. Lunar eclipse: Principle of computation. 4. Lunar eclipse computation: Vāsiṣṭha and Pauliṣa. 5. —Saurasiddhānta. 6. —Āryabhaṭīya. 7. —Āryabhaṭa's Midnight system. 8. —Emendation by Brahmagupta. 9. —Bhāskara I. 10. —Lalla. 11. —Bhāskara II. 12. —Karaṇaratna. 13. —Śrīpati. 14. —Vākyakaraṇa. 15. —Grahalāghava. 16. Lunar eclipse diagram: Vāsiṣṭha Pauliṣa. 17. —Āryabhaṭa's Midnight system. 18. —Bhāskara I. 19. —Lalla. 20. —Sūryasiddhānta. 21. —Bhāskara II. 22. —Karaṇaratna. 23. Solar eclipse: Computation: Pauliṣa. 24. —Romakasiddhānta. 25. —Saurasiddhānta. 26. —Āryabhaṭa's Midnight system. 27. —Bhāskara I. 28. —Lalla. 29. —Mahāsiddhānta. 30. —Bhāskara II. 31. —Karaṇaratna. 32. —Śrīpati. 33. —Grahalāghava. 34. —Solar eclipse diagram: Romakasiddhānta. 35. —Saurasiddhānta. 36. Colour of eclipses. 37. Conditions for non-prediction of eclipses. 38. —Inscriptional references: Lunar eclipses. 38. Solar eclipses.

##### 17. Phases of the Moon ... 241

1. Periodical appearance of the Moon. 2. Moon's luminosity. 3. Conditions of Moon's visibility. 4. Preliminaries for computation. 5. Visibility corrections: Ākṣa, Āyana and the Third. 6. Rising and setting of the Moon. 7. Moon's shadow. 8. Computation of Moon's cusps. 9. Moon's cusps—diagram.

##### 18. Heliacal rising and setting of Planets and Stars ... 254

1. Heliacal rising and setting of planets. 2. Days of rising and setting. 3. Planetary elongation for rising and setting. 4. Visibility corrections. 5. Computation of rising and setting. 6. Jupiter's rising and setting. 7. Venus: Rising and setting. 8. Rising and setting of a star. 9. Canopus: Rising.

##### 19. Conjunction of Planets ... 264

1. Types of planetary conjunctions. 2. Conjunction: Principle of computation. 3. Computation of conjunction.

##### 20. Conjunction of Stars and Planets ... 271

1. Conjunction of stars and planets. 2. Principle of planet-star conjunction. 3. Occultation of stars by planets. 4. Occultation of Rohiṇī by planets. 5. Occultation of stars by the Moon. 6. Time of star-planet conjunction.

#### V. INNOVATIVE TRENDS

##### 21. Novel Innovations ... 274

1. True longitude computation on the sphere of the zodiac. 2. Computation of True Moon. 3. Simplified astronomical procedures.

#### IV. OCCULTATION

##### 16. Eclipses ... 196

1. Cause stated in the Ṛgveda. 2. Cause of the lunar eclipse. 3. Lunar eclipse: Principle of computation. 4. Lunar eclipse computation: Vāsiṣṭha and Pauliṣa. 5. —Saurasiddhānta. 6. —Āryabhaṭīya. 7. —Āryabhaṭa's Midnight system. 8. —Emendation by Brahmagupta. 9. —Bhāskara I. 10. —Lalla. 11. —Bhāskara II. 12. —Karaṇaratna. 13. —Śrīpati. 14. —Vākyakaraṇa. 15. —Grahalāghava. 16. Lunar eclipse diagram: Vāsiṣṭha Pauliṣa. 17. —Āryabhaṭa's Midnight system. 18. —Bhāskara I. 19. —Lalla. 20. —Sūryasiddhānta. 21. —Bhāskara II. 22. —Karaṇaratna. 23. Solar eclipse: Computation: Pauliṣa. 24. —Romakasiddhānta. 25. —Saurasiddhānta. 26. —Āryabhaṭa's Midnight system. 27. —Bhāskara I. 28. —Lalla. 29. —Mahāsiddhānta. 30. —Bhāskara II. 31. —Karaṇaratna. 32. —Śrīpati. 33. —Grahalāghava. 34. —Solar eclipse diagram: Romakasiddhānta. 35. —Saurasiddhānta. 36. Colour of eclipses. 37. Conditions for non-prediction of eclipses. 38. —Inscriptional references: Lunar eclipses. 38. Solar eclipses.

##### 17. Phases of the Moon ... 241

1. Periodical appearance of the Moon. 2. Moon's luminosity. 3. Conditions of Moon's visibility. 4. Preliminaries for computation. 5. Visibility corrections: Ākṣa, Āyana and the Third. 6. Rising and setting of the Moon. 7. Moon's shadow. 8. Computation of Moon's cusps. 9. Moon's cusps—diagram.

##### 18. Heliacal rising and setting of Planets and Stars ... 254

1. Heliacal rising and setting of planets. 2. Days of rising and setting. 3. Planetary elongation for rising and setting. 4. Visibility corrections. 5. Computation of rising and setting. 6. Jupiter's rising and setting. 7. Venus: Rising and setting. 8. Rising and setting of a star. 9. Canopus: Rising.

##### 19. Conjunction of Planets ... 264

1. Types of planetary conjunctions. 2. Conjunction: Principle of computation. 3. Computation of conjunction.

##### 20. Conjunction of Stars and Planets ... 271

1. Conjunction of stars and planets. 2. Principle of planet-star conjunction. 3. Occultation of stars by planets. 4. Occultation of Rohiṇī by planets. 5. Occultation of stars by the Moon. 6. Time of star-planet conjunction.

#### V. INNOVATIVE TRENDS

##### 21. Novel Innovations ... 274

1. True longitude computation on the sphere of the zodiac. 2. Computation of True Moon. 3. Simplified astronomical procedures.

#### IV. OCCULTATION

##### 16. Eclipses ... 196

1. Cause stated in the Ṛgveda. 2. Cause of the lunar eclipse. 3. Lunar eclipse: Principle of computation. 4. Lunar eclipse computation: Vāsiṣṭha and Pauliṣa. 5. —Saurasiddhānta. 6. —Āryabhaṭīya. 7. —Āryabhaṭa's Midnight system. 8. —Emendation by Brahmagupta. 9. —Bhāskara I. 10. —Lalla. 11. —Bhāskara II. 12. —Karaṇaratna. 13. —Śrīpati. 14. —Vākyakaraṇa. 15. —Grahalāghava. 16. Lunar eclipse diagram: Vāsiṣṭha Pauliṣa. 17. —Āryabhaṭa's Midnight system. 18. —Bhāskara I. 19. —Lalla. 20. —Sūryasiddhānta. 21. —Bhāskara II. 22. —Karaṇaratna. 23. Solar eclipse: Computation: Pauliṣa. 24. —Romakasiddhānta. 25. —Saurasiddhānta. 26. —Āryabhaṭa's Midnight system. 27. —Bhāskara I. 28. —Lalla. 29. —Mahāsiddhānta. 30. —Bhāskara II. 31. —Karaṇaratna. 32. —Śrīpati. 33. —Grahalāghava. 34. —Solar eclipse diagram: Romakasiddhānta. 35. —Saurasiddhānta. 36. Colour of eclipses. 37. Conditions for non-prediction of eclipses. 38. —Inscriptional references: Lunar eclipses. 38. Solar eclipses.

##### 17. Phases of the Moon ... 241

1. Periodical appearance of the Moon. 2. Moon's luminosity. 3. Conditions of Moon's visibility. 4. Preliminaries for computation. 5. Visibility corrections: Ākṣa, Āyana and the Third. 6. Rising and setting of the Moon. 7. Moon's shadow. 8. Computation of Moon's cusps. 9. Moon's cusps—diagram.

##### 18. Heliacal rising and setting of Planets and Stars ... 254

1. Heliacal rising and setting of planets. 2. Days of rising and setting. 3. Planetary elongation for rising and setting. 4. Visibility corrections. 5. Computation of rising and setting. 6. Jupiter's rising and setting. 7. Venus: Rising and setting. 8. Rising and setting of a star. 9. Canopus: Rising.

##### 19. Conjunction of Planets ... 264

1. Types of planetary conjunctions. 2. Conjunction: Principle of computation. 3. Computation of conjunction.

##### 20. Conjunction of Stars and Planets ... 271

1. Conjunction of stars and planets. 2. Principle of planet-star conjunction. 3. Occultation of stars by planets. 4. Occultation of Rohiṇī by planets. 5. Occultation of stars by the Moon. 6. Time of star-planet conjunction.

#### V. INNOVATIVE TRENDS

##### 21. Novel Innovations ... 274

1. True longitude computation on the sphere of the zodiac. 2. Computation of True Moon. 3. Simplified astronomical procedures.

#### IV. OCCULTATION

##### 16. Eclipses ... 196

1. Cause stated in the Ṛgveda. 2. Cause of the lunar eclipse. 3. Lunar eclipse: Principle of computation. 4. Lunar eclipse computation: Vāsiṣṭha and Pauliṣa. 5. —Saurasiddhānta. 6. —Āryabhaṭīya. 7. —Āryabhaṭa's Midnight system. 8. —Emendation by Brahmagupta. 9. —Bhāskara I. 10. —Lalla. 11. —Bhāskara II. 12. —Karaṇaratna. 13. —Śrīpati. 14. —Vākyakaraṇa. 15. —Grahalāghava. 16. Lunar eclipse diagram: Vāsiṣṭha Pauliṣa. 17. —Āryabhaṭa's Midnight system. 18. —Bhāskara I. 19. —Lalla. 20. —Sūryasiddhānta. 21. —Bhāskara II. 22. —Karaṇaratna. 23. Solar eclipse: Computation: Pauliṣa. 24. —Romakasiddhānta. 25. —Saurasiddhānta. 26. —Āryabhaṭa's Midnight system. 27. —Bhāskara I. 28. —Lalla. 29. —Mahāsiddhānta. 30. —Bhāskara II. 31. —Karaṇaratna. 32. —Śrīpati. 33. —Grahalāghava. 34. —Solar eclipse diagram: Romakasiddhānta. 35. —Saurasiddhānta. 36. Colour of eclipses. 37. Conditions for non-prediction of eclipses. 38. —Inscriptional references: Lunar eclipses. 38. Solar eclipses.

##### 17. Phases of the Moon ... 241

1. Periodical appearance of the Moon. 2. Moon's luminosity. 3. Conditions of Moon's visibility. 4. Preliminaries for computation. 5. Visibility corrections: Ākṣa, Āyana and the Third. 6. Rising and setting of the Moon. 7. Moon's shadow. 8. Computation of Moon's cusps. 9. Moon's cusps—diagram.

##### 18. Heliacal rising and setting of Planets and Stars ... 254

1. Heliacal rising and setting of planets. 2. Days of rising and setting. 3. Planetary elongation for rising and setting. 4. Visibility corrections. 5. Computation of rising and setting. 6. Jupiter's rising and setting. 7. Venus: Rising and setting. 8. Rising and setting of a star. 9. Canopus: Rising.

##### 19. Conjunction of Planets ... 264

1. Types of planetary conjunctions. 2. Conjunction: Principle of computation. 3. Computation of conjunction.

##### 20. Conjunction of Stars and Planets ... 271

1. Conjunction of stars and planets. 2. Principle of planet-star conjunction. 3. Occultation of stars by planets. 4. Occultation of Rohiṇī by planets. 5. Occultation of stars by the Moon. 6. Time of star-planet conjunction.

#### V. INNOVATIVE TRENDS

##### 21. Novel Innovations ... 274

1. True longitude computation on the sphere of the zodiac. 2. Computation of True Moon. 3. Simplified astronomical procedures.

#### IV. OCCULTATION

##### 16. Eclipses ... 196

1. Cause stated in the Ṛgveda. 2. Cause of the lunar eclipse. 3. Lunar eclipse: Principle of computation. 4. Lunar eclipse computation: Vāsiṣṭha and Pauliṣa. 5. —Saurasiddhānta. 6. —Āryabhaṭīya. 7. —Āryabhaṭa's Midnight system. 8. —Emendation by Brahmagupta. 9. —Bhāskara I. 10. —Lalla. 11. —Bhāskara II. 12. —Karaṇaratna. 13. —Śrīpati. 14. —Vākyakaraṇa. 15. —Grahalāghava. 16. Lunar eclipse diagram: Vāsiṣṭha Pauliṣa. 17. —Āryabhaṭa's Midnight system. 18. —Bhāskara I. 19. —Lalla. 20. —Sūryasiddhānta. 21. —Bhāskara II. 22. —Karaṇaratna. 23. Solar eclipse: Computation: Pauliṣa. 24. —Romakasiddhānta. 25. —Saurasiddhānta. 26. —Āryabhaṭa's Midnight system. 27. —Bhāskara I. 28. —Lalla. 29. —Mahāsiddhānta. 30. —Bhāskara II. 31. —Karaṇaratna. 32. —Śrīpati. 33. —Grahalāghava. 34. —Solar eclipse diagram: Romakasiddhānta. 35. —Saurasiddhānta. 36. Colour of eclipses. 37. Conditions for non-prediction of eclipses. 38. —Inscriptional references: Lunar eclipses. 38. Solar eclipses.

##### 17. Phases of the Moon ... 241

1. Periodical appearance of the Moon. 2. Moon's luminosity. 3. Conditions of Moon's visibility. 4. Preliminaries for computation. 5. Visibility corrections: Ākṣa, Āyana and the Third. 6. Rising and setting of the Moon. 7. Moon's shadow. 8. Computation of Moon's cusps. 9. Moon's cusps—diagram.

##### 18. Heliacal rising and setting of Planets and Stars ... 254

1. Heliacal rising and setting of planets. 2. Days of rising and setting. 3. Planetary elongation for rising and setting. 4. Visibility corrections. 5. Computation of rising and setting. 6. Jupiter's rising and setting. 7. Venus: Rising and setting. 8. Rising and setting of a star. 9. Canopus: Rising.

##### 19. Conjunction of Planets ... 264

1. Types of planetary conjunctions. 2. Conjunction: Principle of computation. 3. Computation of conjunction.

##### 20. Conjunction of Stars and Planets ... 271

1. Conjunction of stars and planets. 2. Principle of planet-star conjunction. 3. Occultation of stars by planets. 4. Occultation of Rohiṇī by planets. 5. Occultation of stars by the Moon. 6. Time of star-planet conjunction.

#### V. INNOVATIVE TRENDS

##### 21. Novel Innovations ... 274

1. True longitude computation on the sphere of the zodiac. 2. Computation of True Moon. 3. Simplified astronomical procedures.



#### IV. OCCULTATION

##### 16. Eclipses ... 196

1. Cause stated in the Ṛgveda. 2. Cause of the lunar eclipse. 3. Lunar eclipse: Principle of computation. 4. Lunar eclipse computation: Vāsiṣṭha and Pauliṣa. 5. —Saurasiddhānta. 6. —Āryabhaṭīya. 7. —Āryabhaṭa's Midnight system. 8. —Emendation by Brahmagupta. 9. —Bhāskara I. 10. —Lalla. 11. —Bhāskara II. 12. —Karaṇaratna. 13. —Śrīpati. 14. —Vākyakaraṇa. 15. —Grahalāghava. 16. Lunar eclipse diagram: Vāsiṣṭha Pauliṣa. 17. —Āryabhaṭa's Midnight system. 18. —Bhāskara I. 19. —Lalla. 20. —Sūryasiddhānta. 21. —Bhāskara II. 22. —Karaṇaratna. 23. Solar eclipse: Computation: Pauliṣa. 24. —Romakasiddhānta. 25. —Saurasiddhānta. 26. —Āryabhaṭa's Midnight system. 27. —Bhāskara I. 28. —Lalla. 29. —Mahāsiddhānta. 30. —Bhāskara II. 31. —Karaṇaratna. 32. —Śrīpati. 33. —Grahalāghava. 34. —Solar eclipse diagram: Romakasiddhānta. 35. —Saurasiddhānta. 36. Colour of eclipses. 37. Conditions for non-prediction of eclipses. 38. —Inscriptional references: Lunar eclipses. 38. Solar eclipses.

##### 17. Phases of the Moon ... 241

1. Periodical appearance of the Moon. 2. Moon's luminosity. 3. Conditions of Moon's visibility. 4. Preliminaries for computation. 5. Visibility corrections: Ākṣa, Āyana and the Third. 6. Rising and setting of the Moon. 7. Moon's shadow. 8. Computation of Moon's cusps. 9. Moon's cusps—diagram.

##### 18. Heliacal rising and setting of Planets and Stars ... 254

1. Heliacal rising and setting of planets. 2. Days of rising and setting. 3. Planetary elongation for rising and setting. 4. Visibility corrections. 5. Computation of rising and setting. 6. Jupiter's rising and setting. 7. Venus: Rising and setting. 8. Rising and setting of a star. 9. Canopus: Rising.

##### 19. Conjunction of Planets ... 264

1. Types of planetary conjunctions. 2. Conjunction: Principle of computation. 3. Computation of conjunction.

##### 20. Conjunction of Stars and Planets ... 271

1. Conjunction of stars and planets. 2. Principle of planet-star conjunction. 3. Occultation of stars by planets. 4. Occultation of Rohiṇī by planets. 5. Occultation of stars by the Moon. 6. Time of star-planet conjunction.

#### V. INNOVATIVE TRENDS

##### 21. Novel Innovations ... 274

1. True longitude computation on the sphere of the zodiac. 2. Computation of True Moon. 3. Simplified astronomical procedures.

#### IV. OCCULTATION

##### 16. Eclipses ... 196

1. Cause stated in the Ṛgveda. 2. Cause of the lunar eclipse. 3. Lunar eclipse: Principle of computation. 4. Lunar eclipse computation: Vāsiṣṭha and Pauliṣa. 5. —Saurasiddhānta. 6. —Āryabhaṭīya. 7. —Āryabhaṭa's Midnight system. 8. —Emendation by Brahmagupta. 9. —Bhāskara I. 10. —Lalla. 11. —Bhāskara II. 12. —Karaṇaratna. 13. —Śrīpati. 14. —Vākyakaraṇa. 15. —Grahalāghava. 16. Lunar eclipse diagram: Vāsiṣṭha Pauliṣa. 17. —Āryabhaṭa's Midnight system. 18. —Bhāskara I. 19. —Lalla. 20. —Sūryasiddhānta. 21. —Bhāskara II. 22. —Karaṇaratna. 23. Solar eclipse: Computation: Pauliṣa. 24. —Romakasiddhānta. 25. —Saurasiddhānta. 26. —Āryabhaṭa's Midnight system. 27. —Bhāskara I. 28. —Lalla. 29. —Mahāsiddhānta. 30. —Bhāskara II. 31. —Karaṇaratna. 32. —Śrīpati. 33. —Grahalāghava. 34. —Solar eclipse diagram: Romakasiddhānta. 35. —Saurasiddhānta. 36. Colour of eclipses. 37. Conditions for non-prediction of eclipses. 38. —Inscriptional references: Lunar eclipses. 38. Solar eclipses.

##### 17. Phases of the Moon ... 241

1. Periodical appearance of the Moon. 2. Moon's luminosity. 3. Conditions of Moon's visibility. 4. Preliminaries for computation. 5. Visibility corrections: Ākṣa, Āyana and the Third. 6. Rising and setting of the Moon. 7. Moon's shadow. 8. Computation of Moon's cusps. 9. Moon's cusps—diagram.

##### 18. Heliacal rising and setting of Planets and Stars ... 254

1. Heliacal rising and setting of planets. 2. Days of rising and setting. 3. Planetary elongation for rising and setting. 4. Visibility corrections. 5. Computation of rising and setting. 6. Jupiter's rising and setting. 7. Venus: Rising and setting. 8. Rising and setting of a star. 9. Canopus: Rising.

##### 19. Conjunction of Planets ... 264

1. Types of planetary conjunctions. 2. Conjunction: Principle of computation. 3. Computation of conjunction.

##### 20. Conjunction of Stars and Planets ... 271

1. Conjunction of stars and planets. 2. Principle of planet-star conjunction. 3. Occultation of stars by planets. 4. Occultation of Rohiṇī by planets. 5. Occultation of stars by the Moon. 6. Time of star-planet conjunction.

#### V. INNOVATIVE TRENDS

##### 21. Novel Innovations ... 274

1. True longitude computation on the sphere of the zodiac. 2. Computation of True Moon. 3. Simplified astronomical procedures.

#### IV. OCCULTATION

##### 16. Eclipses ... 196

1. Cause stated in the Ṛgveda. 2. Cause of the lunar eclipse. 3. Lunar eclipse: Principle of computation. 4. Lunar eclipse computation: Vāsiṣṭha and Pauliṣa. 5. —Saurasiddhānta. 6. —Āryabhaṭīya. 7. —Āryabhaṭa's Midnight system. 8. —Emendation by Brahmagupta. 9. —Bhāskara I. 10. —Lalla. 11. —Bhāskara II. 12. —Karaṇaratna. 13. —Śrīpati. 14. —Vākyakaraṇa. 15. —Grahalāghava. 16. Lunar eclipse diagram: Vāsiṣṭha Pauliṣa. 17. —Āryabhaṭa's Midnight system. 18. —Bhāskara I. 19. —Lalla. 20. —Sūryasiddhānta. 21. —Bhāskara II. 22. —Karaṇaratna. 23. Solar eclipse: Computation: Pauliṣa. 24. —Romakasiddhānta. 25. —Saurasiddhānta. 26. —Āryabhaṭa's Midnight system. 27. —Bhāskara I. 28. —Lalla. 29. —Mahāsiddhānta. 30. —Bhāskara II. 31. —Karaṇaratna. 32. —Śrīpati. 33. —Grahalāghava. 34. —Solar eclipse diagram: Romakasiddhānta. 35. —Saurasiddhānta. 36. Colour of eclipses. 37. Conditions for non-prediction of eclipses. 38. —Inscriptional references: Lunar eclipses. 38. Solar eclipses.

##### 17. Phases of the Moon ... 241

1. Periodical appearance of the Moon. 2. Moon's luminosity. 3. Conditions of Moon's visibility. 4. Preliminaries for computation. 5. Visibility corrections: Ākṣa, Āyana and the Third. 6. Rising and setting of the Moon. 7. Moon's shadow. 8. Computation of Moon's cusps. 9. Moon's cusps—diagram.

##### 18. Heliacal rising and setting of Planets and Stars ... 254

1. Heliacal rising and setting of planets. 2. Days of rising and setting. 3. Planetary elongation for rising and setting. 4. Visibility corrections. 5. Computation of rising and setting. 6. Jupiter's rising and setting. 7. Venus: Rising and setting. 8. Rising and setting of a star. 9. Canopus: Rising.

##### 19. Conjunction of Planets ... 264

1. Types of planetary conjunctions. 2. Conjunction: Principle of computation. 3. Computation of conjunction.

##### 20. Conjunction of Stars and Planets ... 271

1. Conjunction of stars and planets. 2. Principle of planet-star conjunction. 3. Occultation of stars by planets. 4. Occultation of Rohiṇī by planets. 5. Occultation of stars by the Moon. 6. Time of star-planet conjunction.

#### V. INNOVATIVE TRENDS

##### 21. Novel Innovations ... 274

1. True longitude computation on the sphere of the zodiac. 2. Computation of True Moon. 3. Simplified astronomical procedures.

division by 3031. Divide the remainder of this by 248. The remainder of this is the number of the mnemonics to be taken from the Moon's mnemonic-tables beginning with *Girnaḥ śreyah*.<sup>1</sup> Multiply  $9^{\circ} 27' 48'' 10'''$  by the first quotient,  $11^{\circ} 7' 31'' 1'''$  by the second quotient, and  $0^{\circ} 27' 44'' 6'''$  by the third quotient; add them up and add  $7^{\circ} 2' 0'' 7'''$ . This sum is the Moon's *dhruva*. Add to this the value of the mnemonic from the table. The Uncorrected True Moon is got. (9-11)

Multiply the second quotient by 8 and deduct this from the third quotient multiplied by 32. The result are *plus-vinādis*. If the third quotient is zero, the product of the second quotient by 8 alone should be taken and treated as *minus-vinādis*. Deduct  $13^{\circ} 11'$  from the true daily motion in degrees, and multiply the degrees etc. by the *plus* or *minus-vinādis*. The result are *plus* or *minus* seconds of arc etc., and these should be applied to the Uncorrected true Moon. If the daily motion is less than  $13^{\circ} 11'$ , then the defect is to be multiplied by the *plus* or *minus vinādis* and the resulting seconds should be taken as *minus* or *plus* seconds, respectively, and applied to the Uncorrected True Moon. The True Moon is got.<sup>2</sup> (12-14a). (TSK-KVS)

गीर्नः श्रेयादि चन्द्रवाक्यानि वररुचिकृतानि

**Moon sentences 'gīrnaḥ śreyah' etc. of vararuci**

Days	Vākya	r	o	'
1	गीर्नः श्रेयः	0	12	3
	धेनवः श्रीः	0	24	9
	रुद्रस्तु नम्यः	1	6	22
	भवो हि याज्यः	1	18	44
5	धन्येयं नारी	2	1	19
	धनवान् पुत्रः	2	14	9
	गृह्या सुरा राज्ञा	2	27	13
	बालेन कुलम्	3	10	33
	धनुर्भिः खलैः	3	24	9
10	दश सूनवः	4	7	58
	होमस्य सुवः	4	21	58
	दीनास्ते नृणाम्	5	6	8
	मुखं नारीणाम्	5	20	25
	भवभगनास्ते	6	4	44
15	श्रीर्निधीयते	6	19	2
	शं किल नाथः	7	3	15
	श्रेष्ठा सा कथा	7	17	22
	सौख्यस्यानन्दः	8	1	17
	ध्यानं मान्यं हि	8	15	1

Days	Vākya	r	o	'
20	धीरो हि राजा	8	28	29
	श्रुत्वास्य युद्धम्	9	11	42
	अभवच्छादम्	9	24	40
	गोरसो ननु स्यात्	10	7	23
	द्रुमा धन्या नये	10	19	52
25	इष्टं राज्ञः कुर्यात्	11	2	10
	धन्या विद्येयं स्यात्	11	14	19
	त्वं रक्षा राज्यस्य	11	26	24
	क्षेत्रजः	0	8	26
	नीले नेत्रे	0	20	30
30	जलं प्राज्ञाय	1	2	38
	शशी वन्द्यः स्यात्	1	14	55
	गोरसप्रियः	1	27	23
	वनानि यत्र	2	10	4
	अन्नं गोवृक्षीः	2	23	0
35	रुष्टास्ते नागाः	3	6	12
	धिगन्धः किल	3	19	39
	पुरोगा अभीः	4	3	21
	मान्यः स कविः	4	17	15
	अरिष्टनाशम्	5	1	20
40	बालो मे केशः	5	15	33
	कुशधारिणः	5	29	51
	इष्टिविद्यते	6	41	10
	स राजा प्रीतः	6	28	27
	सुगुप्रायोऽसौ	7	12	37
45	धिगस्तु ह्लासः	7	26	39
	अङ्गानि यदा	8	10	30
	सेनावान् राजा	8	24	7
	धीराः सन्नद्धाः	9	7	29
	शालीनं प्रधानम्	9	20	35
50	क्षीरं गोनो नयेत्	10	3	26
	रत्नचयो नृपः	10	16	2
	ताः प्रजाः प्राज्ञाः स्युः	10	28	26
	अश्वानां को योग्यः	11	10	40
	तद्वैरं प्रियायाः	11	22	46
55	धवस्त्वम्	0	4	49
	ग्रामस्तस्य	0	16	52
	जन्मजरा	0	28	58
	इष्टका कार्या	1	11	10
	कुलगुरुः स्यात्	1	23	31
60	मुनिस्तु उग्रः	2	6	5
	प्रमोदकरः	2	18	52
	शशाङ्कानुगः	3	1	55
	वक्ष्यामि कालम्	3	15	14
	संभेदः खलैः	3	28	47

<sup>1</sup> For this table, known as *Vararuci-vākyaṇi* by Kerala-Vararuci, see below.

<sup>2</sup> For worked out example see, *VK:TSK-KVS*, p. 254.

#### IV. OCCULTATION

##### 16. Eclipses ... 196

1. Cause stated in the Ṛgveda. 2. Cause of the lunar eclipse. 3. Lunar eclipse: Principle of computation. 4. Lunar eclipse computation: Vāsiṣṭha and Pauliṣa. 5. —Saurasiddhānta. 6. —Āryabhaṭīya. 7. —Āryabhaṭa's Midnight system. 8. —Emendation by Brahmagupta. 9. —Bhāskara I. 10. —Lalla. 11. —Bhāskara II. 12. —Karaṇaratna. 13. —Śrīpati. 14. —Vākyakaraṇa. 15. —Grahalāghava. 16. Lunar eclipse diagram: Vāsiṣṭha Pauliṣa. 17. —Āryabhaṭa's Midnight system. 18. —Bhāskara I. 19. —Lalla. 20. —Sūryasiddhānta. 21. —Bhāskara II. 22. —Karaṇaratna. 23. Solar eclipse: Computation: Pauliṣa. 24. —Romakasiddhānta. 25. —Saurasiddhānta. 26. —Āryabhaṭa's Midnight system. 27. —Bhāskara I. 28. —Lalla. 29. —Mahāsiddhānta. 30. —Bhāskara II. 31. —Karaṇaratna. 32. —Śrīpati. 33. —Grahalāghava. 34. —Solar eclipse diagram: Romakasiddhānta. 35. —Saurasiddhānta. 36. Colour of eclipses. 37. Conditions for non-prediction of eclipses. 38. —Inscriptional references: Lunar eclipses. 38. Solar eclipses.

##### 17. Phases of the Moon ... 241

1. Periodical appearance of the Moon. 2. Moon's luminosity. 3. Conditions of Moon's visibility. 4. Preliminaries for computation. 5. Visibility corrections: Ākṣa, Āyana and the Third. 6. Rising and setting of the Moon. 7. Moon's shadow. 8. Computation of Moon's cusps. 9. Moon's cusps—diagram.

##### 18. Heliacal rising and setting of Planets and Stars ... 254

1. Heliacal rising and setting of planets. 2. Days of rising and setting. 3. Planetary elongation for rising and setting. 4. Visibility corrections. 5. Computation of rising and setting. 6. Jupiter's rising and setting. 7. Venus: Rising and setting. 8. Rising and setting of a star. 9. Canopus: Rising.

##### 19. Conjunction of Planets ... 264

1. Types of planetary conjunctions. 2. Conjunction: Principle of computation. 3. Computation of conjunction.

##### 20. Conjunction of Stars and Planets ... 271

1. Conjunction of stars and planets. 2. Principle of planet-star conjunction. 3. Occultation of stars by planets. 4. Occultation of Rohiṇī by planets. 5. Occultation of stars by the Moon. 6. Time of star-planet conjunction.

#### V. INNOVATIVE TRENDS

##### 21. Novel Innovations ... 274

1. True longitude computation on the sphere of the zodiac. 2. Computation of True Moon. 3. Simplified astronomical procedures.

#### IV. OCCULTATION

##### 16. Eclipses ... 196

1. Cause stated in the Ṛgveda. 2. Cause of the lunar eclipse. 3. Lunar eclipse: Principle of computation. 4. Lunar eclipse computation: Vāsiṣṭha and Pauliṣa. 5. —Saurasiddhānta. 6. —Āryabhaṭīya. 7. —Āryabhaṭa's Midnight system. 8. —Emendation by Brahmagupta. 9. —Bhāskara I. 10. —Lalla. 11. —Bhāskara II. 12. —Karaṇaratna. 13. —Śrīpati. 14. —Vākyakaraṇa. 15. —Grahalāghava. 16. Lunar eclipse diagram: Vāsiṣṭha Pauliṣa. 17. —Āryabhaṭa's Midnight system. 18. —Bhāskara I. 19. —Lalla. 20. —Sūryasiddhānta. 21. —Bhāskara II. 22. —Karaṇaratna. 23. Solar eclipse: Computation: Pauliṣa. 24. —Romakasiddhānta. 25. —Saurasiddhānta. 26. —Āryabhaṭa's Midnight system. 27. —Bhāskara I. 28. —Lalla. 29. —Mahāsiddhānta. 30. —Bhāskara II. 31. —Karaṇaratna. 32. —Śrīpati. 33. —Grahalāghava. 34. —Solar eclipse diagram: Romakasiddhānta. 35. —Saurasiddhānta. 36. Colour of eclipses. 37. Conditions for non-prediction of eclipses. 38. —Inscriptional references: Lunar eclipses. 38. Solar eclipses.

##### 17. Phases of the Moon ... 241

1. Periodical appearance of the Moon. 2. Moon's luminosity. 3. Conditions of Moon's visibility. 4. Preliminaries for computation. 5. Visibility corrections: Ākṣa, Āyana and the Third. 6. Rising and setting of the Moon. 7. Moon's shadow. 8. Computation of Moon's cusps. 9. Moon's cusps—diagram.

##### 18. Heliacal rising and setting of Planets and Stars ... 254

1. Heliacal rising and setting of planets. 2. Days of rising and setting. 3. Planetary elongation for rising and setting. 4. Visibility corrections. 5. Computation of rising and setting. 6. Jupiter's rising and setting. 7. Venus: Rising and setting. 8. Rising and setting of a star. 9. Canopus: Rising.

##### 19. Conjunction of Planets ... 264

1. Types of planetary conjunctions. 2. Conjunction: Principle of computation. 3. Computation of conjunction.

##### 20. Conjunction of Stars and Planets ... 271

1. Conjunction of stars and planets. 2. Principle of planet-star conjunction. 3. Occultation of stars by planets. 4. Occultation of Rohiṇī by planets. 5. Occultation of stars by the Moon. 6. Time of star-planet conjunction.

#### V. INNOVATIVE TRENDS

##### 21. Novel Innovations ... 274

1. True longitude computation on the sphere of the zodiac. 2. Computation of True Moon. 3. Simplified astronomical procedures.

#### IV. OCCULTATION

##### 16. Eclipses ... 196

1. Cause stated in the Ṛgveda. 2. Cause of the lunar eclipse. 3. Lunar eclipse: Principle of computation. 4. Lunar eclipse computation: Vāsiṣṭha and Pauliṣa. 5. —Saurasiddhānta. 6. —Āryabhaṭīya. 7. —Āryabhaṭa's Midnight system. 8. —Emendation by Brahmagupta. 9. —Bhāskara I. 10. —Lalla. 11. —Bhāskara II. 12. —Karaṇaratna. 13. —Śrīpati. 14. —Vākyakaraṇa. 15. —Grahalāghava. 16. Lunar eclipse diagram: Vāsiṣṭha Pauliṣa. 17. —Āryabhaṭa's Midnight system. 18. —Bhāskara I. 19. —Lalla. 20. —Sūryasiddhānta. 21. —Bhāskara II. 22. —Karaṇaratna. 23. Solar eclipse: Computation: Pauliṣa. 24. —Romakasiddhānta. 25. —Saurasiddhānta. 26. —Āryabhaṭa's Midnight system. 27. —Bhāskara I. 28. —Lalla. 29. —Mahāsiddhānta. 30. —Bhāskara II. 31. —Karaṇaratna. 32. —Śrīpati. 33. —Grahalāghava. 34. —Solar eclipse diagram: Romakasiddhānta. 35. —Saurasiddhānta. 36. Colour of eclipses. 37. Conditions for non-prediction of eclipses. 38. —Inscriptional references: Lunar eclipses. 38. Solar eclipses.

##### 17. Phases of the Moon ... 241

1. Periodical appearance of the Moon. 2. Moon's luminosity. 3. Conditions of Moon's visibility. 4. Preliminaries for computation. 5. Visibility corrections: Ākṣa, Āyana and the Third. 6. Rising and setting of the Moon. 7. Moon's shadow. 8. Computation of Moon's cusps. 9. Moon's cusps—diagram.

##### 18. Heliacal rising and setting of Planets and Stars ... 254

1. Heliacal rising and setting of planets. 2. Days of rising and setting. 3. Planetary elongation for rising and setting. 4. Visibility corrections. 5. Computation of rising and setting. 6. Jupiter's rising and setting. 7. Venus: Rising and setting. 8. Rising and setting of a star. 9. Canopus: Rising.

##### 19. Conjunction of Planets ... 264

1. Types of planetary conjunctions. 2. Conjunction: Principle of computation. 3. Computation of conjunction.

##### 20. Conjunction of Stars and Planets ... 271

1. Conjunction of stars and planets. 2. Principle of planet-star conjunction. 3. Occultation of stars by planets. 4. Occultation of Rohiṇī by planets. 5. Occultation of stars by the Moon. 6. Time of star-planet conjunction.

#### V. INNOVATIVE TRENDS

##### 21. Novel Innovations ... 274

1. True longitude computation on the sphere of the zodiac. 2. Computation of True Moon. 3. Simplified astronomical procedures.

#### IV. OCCULTATION

##### 16. Eclipses ... 196

1. Cause stated in the Ṛgveda. 2. Cause of the lunar eclipse. 3. Lunar eclipse: Principle of computation. 4. Lunar eclipse computation: Vāsiṣṭha and Pauliṣa. 5. —Saurasiddhānta. 6. —Āryabhaṭīya. 7. —Āryabhaṭa's Midnight system. 8. —Emendation by Brahmagupta. 9. —Bhāskara I. 10. —Lalla. 11. —Bhāskara II. 12. —Karaṇaratna. 13. —Śrīpati. 14. —Vākyakaraṇa. 15. —Grahalāghava. 16. Lunar eclipse diagram: Vāsiṣṭha Pauliṣa. 17. —Āryabhaṭa's Midnight system. 18. —Bhāskara I. 19. —Lalla. 20. —Sūryasiddhānta. 21. —Bhāskara II. 22. —Karaṇaratna. 23. Solar eclipse: Computation: Pauliṣa. 24. —Romakasiddhānta. 25. —Saurasiddhānta. 26. —Āryabhaṭa's Midnight system. 27. —Bhāskara I. 28. —Lalla. 29. —Mahāsiddhānta. 30. —Bhāskara II. 31. —Karaṇaratna. 32. —Śrīpati. 33. —Grahalāghava. 34. —Solar eclipse diagram: Romakasiddhānta. 35. —Saurasiddhānta. 36. Colour of eclipses. 37. Conditions for non-prediction of eclipses. 38. —Inscriptional references: Lunar eclipses. 38. Solar eclipses.

##### 17. Phases of the Moon ... 241

1. Periodical appearance of the Moon. 2. Moon's luminosity. 3. Conditions of Moon's visibility. 4. Preliminaries for computation. 5. Visibility corrections: Ākṣa, Āyana and the Third. 6. Rising and setting of the Moon. 7. Moon's shadow. 8. Computation of Moon's cusps. 9. Moon's cusps—diagram.

##### 18. Heliacal rising and setting of Planets and Stars ... 254

1. Heliacal rising and setting of planets. 2. Days of rising and setting. 3. Planetary elongation for rising and setting. 4. Visibility corrections. 5. Computation of rising and setting. 6. Jupiter's rising and setting. 7. Venus: Rising and setting. 8. Rising and setting of a star. 9. Canopus: Rising.

##### 19. Conjunction of Planets ... 264

1. Types of planetary conjunctions. 2. Conjunction: Principle of computation. 3. Computation of conjunction.

##### 20. Conjunction of Stars and Planets ... 271

1. Conjunction of stars and planets. 2. Principle of planet-star conjunction. 3. Occultation of stars by planets. 4. Occultation of Rohiṇī by planets. 5. Occultation of stars by the Moon. 6. Time of star-planet conjunction.

#### V. INNOVATIVE TRENDS

##### 21. Novel Innovations ... 274

1. True longitude computation on the sphere of the zodiac. 2. Computation of True Moon. 3. Simplified astronomical procedures.



#### IV. OCCULTATION

##### 16. Eclipses ... 196

1. Cause stated in the Ṛgveda. 2. Cause of the lunar eclipse. 3. Lunar eclipse: Principle of computation. 4. Lunar eclipse computation: Vāsiṣṭha and Pauliṣa. 5. —Saurasiddhānta. 6. —Āryabhaṭīya. 7. —Āryabhaṭa's Midnight system. 8. —Emendation by Brahmagupta. 9. —Bhāskara I. 10. —Lalla. 11. —Bhāskara II. 12. —Karaṇaratna. 13. —Śrīpati. 14. —Vākyakaraṇa. 15. —Grahalāghava. 16. Lunar eclipse diagram: Vāsiṣṭha Pauliṣa. 17. —Āryabhaṭa's Midnight system. 18. —Bhāskara I. 19. —Lalla. 20. —Sūryasiddhānta. 21. —Bhāskara II. 22. —Karaṇaratna. 23. Solar eclipse: Computation: Pauliṣa. 24. —Romakasiddhānta. 25. —Saurasiddhānta. 26. —Āryabhaṭa's Midnight system. 27. —Bhāskara I. 28. —Lalla. 29. —Mahāsiddhānta. 30. —Bhāskara II. 31. —Karaṇaratna. 32. —Śrīpati. 33. —Grahalāghava. 34. —Solar eclipse diagram: Romakasiddhānta. 35. —Saurasiddhānta. 36. Colour of eclipses. 37. Conditions for non-prediction of eclipses. 38. —Inscriptional references: Lunar eclipses. 38. Solar eclipses.

##### 17. Phases of the Moon ... 241

1. Periodical appearance of the Moon. 2. Moon's luminosity. 3. Conditions of Moon's visibility. 4. Preliminaries for computation. 5. Visibility corrections: Ākṣa, Āyana and the Third. 6. Rising and setting of the Moon. 7. Moon's shadow. 8. Computation of Moon's cusps. 9. Moon's cusps—diagram.

##### 18. Heliacal rising and setting of Planets and Stars ... 254

1. Heliacal rising and setting of planets. 2. Days of rising and setting. 3. Planetary elongation for rising and setting. 4. Visibility corrections. 5. Computation of rising and setting. 6. Jupiter's rising and setting. 7. Venus: Rising and setting. 8. Rising and setting of a star. 9. Canopus: Rising.

##### 19. Conjunction of Planets ... 264

1. Types of planetary conjunctions. 2. Conjunction: Principle of computation. 3. Computation of conjunction.

##### 20. Conjunction of Stars and Planets ... 271

1. Conjunction of stars and planets. 2. Principle of planet-star conjunction. 3. Occultation of stars by planets. 4. Occultation of Rohiṇī by planets. 5. Occultation of stars by the Moon. 6. Time of star-planet conjunction.

#### V. INNOVATIVE TRENDS

##### 21. Novel Innovations ... 274

1. True longitude computation on the sphere of the zodiac. 2. Computation of True Moon. 3. Simplified astronomical procedures.

#### IV. OCCULTATION

##### 16. Eclipses ... 196

1. Cause stated in the Ṛgveda. 2. Cause of the lunar eclipse. 3. Lunar eclipse: Principle of computation. 4. Lunar eclipse computation: Vāsiṣṭha and Pauliṣa. 5. —Saurasiddhānta. 6. —Āryabhaṭīya. 7. —Āryabhaṭa's Midnight system. 8. —Emendation by Brahmagupta. 9. —Bhāskara I. 10. —Lalla. 11. —Bhāskara II. 12. —Karaṇaratna. 13. —Śrīpati. 14. —Vākyakaraṇa. 15. —Grahalāghava. 16. Lunar eclipse diagram: Vāsiṣṭha Pauliṣa. 17. —Āryabhaṭa's Midnight system. 18. —Bhāskara I. 19. —Lalla. 20. —Sūryasiddhānta. 21. —Bhāskara II. 22. —Karaṇaratna. 23. Solar eclipse: Computation: Pauliṣa. 24. —Romakasiddhānta. 25. —Saurasiddhānta. 26. —Āryabhaṭa's Midnight system. 27. —Bhāskara I. 28. —Lalla. 29. —Mahāsiddhānta. 30. —Bhāskara II. 31. —Karaṇaratna. 32. —Śrīpati. 33. —Grahalāghava. 34. —Solar eclipse diagram: Romakasiddhānta. 35. —Saurasiddhānta. 36. Colour of eclipses. 37. Conditions for non-prediction of eclipses. 38. —Inscriptional references: Lunar eclipses. 38. Solar eclipses.

##### 17. Phases of the Moon ... 241

1. Periodical appearance of the Moon. 2. Moon's luminosity. 3. Conditions of Moon's visibility. 4. Preliminaries for computation. 5. Visibility corrections: Ākṣa, Āyana and the Third. 6. Rising and setting of the Moon. 7. Moon's shadow. 8. Computation of Moon's cusps. 9. Moon's cusps—diagram.

##### 18. Heliacal rising and setting of Planets and Stars ... 254

1. Heliacal rising and setting of planets. 2. Days of rising and setting. 3. Planetary elongation for rising and setting. 4. Visibility corrections. 5. Computation of rising and setting. 6. Jupiter's rising and setting. 7. Venus: Rising and setting. 8. Rising and setting of a star. 9. Canopus: Rising.

##### 19. Conjunction of Planets ... 264

1. Types of planetary conjunctions. 2. Conjunction: Principle of computation. 3. Computation of conjunction.

##### 20. Conjunction of Stars and Planets ... 271

1. Conjunction of stars and planets. 2. Principle of planet-star conjunction. 3. Occultation of stars by planets. 4. Occultation of Rohiṇī by planets. 5. Occultation of stars by the Moon. 6. Time of star-planet conjunction.

#### V. INNOVATIVE TRENDS

##### 21. Novel Innovations ... 274

1. True longitude computation on the sphere of the zodiac. 2. Computation of True Moon. 3. Simplified astronomical procedures.

#### IV. OCCULTATION

##### 16. Eclipses ... 196

1. Cause stated in the Ṛgveda. 2. Cause of the lunar eclipse. 3. Lunar eclipse: Principle of computation. 4. Lunar eclipse computation: Vāsiṣṭha and Pauliṣa. 5. —Saurasiddhānta. 6. —Āryabhaṭīya. 7. —Āryabhaṭa's Midnight system. 8. —Emendation by Brahmagupta. 9. —Bhāskara I. 10. —Lalla. 11. —Bhāskara II. 12. —Karaṇaratna. 13. —Śrīpati. 14. —Vākyakaraṇa. 15. —Grahalāghava. 16. Lunar eclipse diagram: Vāsiṣṭha Pauliṣa. 17. —Āryabhaṭa's Midnight system. 18. —Bhāskara I. 19. —Lalla. 20. —Sūryasiddhānta. 21. —Bhāskara II. 22. —Karaṇaratna. 23. Solar eclipse: Computation: Pauliṣa. 24. —Romakasiddhānta. 25. —Saurasiddhānta. 26. —Āryabhaṭa's Midnight system. 27. —Bhāskara I. 28. —Lalla. 29. —Mahāsiddhānta. 30. —Bhāskara II. 31. —Karaṇaratna. 32. —Śrīpati. 33. —Grahalāghava. 34. —Solar eclipse diagram: Romakasiddhānta. 35. —Saurasiddhānta. 36. Colour of eclipses. 37. Conditions for non-prediction of eclipses. 38. —Inscriptional references: Lunar eclipses. 38. Solar eclipses.

##### 17. Phases of the Moon ... 241

1. Periodical appearance of the Moon. 2. Moon's luminosity. 3. Conditions of Moon's visibility. 4. Preliminaries for computation. 5. Visibility corrections: Ākṣa, Āyana and the Third. 6. Rising and setting of the Moon. 7. Moon's shadow. 8. Computation of Moon's cusps. 9. Moon's cusps—diagram.

##### 18. Heliacal rising and setting of Planets and Stars ... 254

1. Heliacal rising and setting of planets. 2. Days of rising and setting. 3. Planetary elongation for rising and setting. 4. Visibility corrections. 5. Computation of rising and setting. 6. Jupiter's rising and setting. 7. Venus: Rising and setting. 8. Rising and setting of a star. 9. Canopus: Rising.

##### 19. Conjunction of Planets ... 264

1. Types of planetary conjunctions. 2. Conjunction: Principle of computation. 3. Computation of conjunction.

##### 20. Conjunction of Stars and Planets ... 271

1. Conjunction of stars and planets. 2. Principle of planet-star conjunction. 3. Occultation of stars by planets. 4. Occultation of Rohiṇī by planets. 5. Occultation of stars by the Moon. 6. Time of star-planet conjunction.

#### V. INNOVATIVE TRENDS

##### 21. Novel Innovations ... 274

1. True longitude computation on the sphere of the zodiac. 2. Computation of True Moon. 3. Simplified astronomical procedures.

#### IV. OCCULTATION

##### 16. Eclipses ... 196

1. Cause stated in the Ṛgveda. 2. Cause of the lunar eclipse. 3. Lunar eclipse: Principle of computation. 4. Lunar eclipse computation: Vāsiṣṭha and Pauliṣa. 5. —Saurasiddhānta. 6. —Āryabhaṭīya. 7. —Āryabhaṭa's Midnight system. 8. —Emendation by Brahmagupta. 9. —Bhāskara I. 10. —Lalla. 11. —Bhāskara II. 12. —Karaṇaratna. 13. —Śrīpati. 14. —Vākyakaraṇa. 15. —Grahalāghava. 16. Lunar eclipse diagram: Vāsiṣṭha Pauliṣa. 17. —Āryabhaṭa's Midnight system. 18. —Bhāskara I. 19. —Lalla. 20. —Sūryasiddhānta. 21. —Bhāskara II. 22. —Karaṇaratna. 23. Solar eclipse: Computation: Pauliṣa. 24. —Romakasiddhānta. 25. —Saurasiddhānta. 26. —Āryabhaṭa's Midnight system. 27. —Bhāskara I. 28. —Lalla. 29. —Mahāsiddhānta. 30. —Bhāskara II. 31. —Karaṇaratna. 32. —Śrīpati. 33. —Grahalāghava. 34. —Solar eclipse diagram: Romakasiddhānta. 35. —Saurasiddhānta. 36. Colour of eclipses. 37. Conditions for non-prediction of eclipses. 38. —Inscriptional references: Lunar eclipses. 38. Solar eclipses.

##### 17. Phases of the Moon ... 241

1. Periodical appearance of the Moon. 2. Moon's luminosity. 3. Conditions of Moon's visibility. 4. Preliminaries for computation. 5. Visibility corrections: Ākṣa, Āyana and the Third. 6. Rising and setting of the Moon. 7. Moon's shadow. 8. Computation of Moon's cusps. 9. Moon's cusps—diagram.

##### 18. Heliacal rising and setting of Planets and Stars ... 254

1. Heliacal rising and setting of planets. 2. Days of rising and setting. 3. Planetary elongation for rising and setting. 4. Visibility corrections. 5. Computation of rising and setting. 6. Jupiter's rising and setting. 7. Venus: Rising and setting. 8. Rising and setting of a star. 9. Canopus: Rising.

##### 19. Conjunction of Planets ... 264

1. Types of planetary conjunctions. 2. Conjunction: Principle of computation. 3. Computation of conjunction.

##### 20. Conjunction of Stars and Planets ... 271

1. Conjunction of stars and planets. 2. Principle of planet-star conjunction. 3. Occultation of stars by planets. 4. Occultation of Rohiṇī by planets. 5. Occultation of stars by the Moon. 6. Time of star-planet conjunction.

#### V. INNOVATIVE TRENDS

##### 21. Novel Innovations ... 274

1. True longitude computation on the sphere of the zodiac. 2. Computation of True Moon. 3. Simplified astronomical procedures.

#### IV. OCCULTATION

##### 16. Eclipses ... 196

1. Cause stated in the Ṛgveda. 2. Cause of the lunar eclipse. 3. Lunar eclipse: Principle of computation. 4. Lunar eclipse computation: Vāsiṣṭha and Pauliṣa. 5. —Saurasiddhānta. 6. —Āryabhaṭīya. 7. —Āryabhaṭa's Midnight system. 8. —Emendation by Brahmagupta. 9. —Bhāskara I. 10. —Lalla. 11. —Bhāskara II. 12. —Karaṇaratna. 13. —Śrīpati. 14. —Vākyakaraṇa. 15. —Grahalāghava. 16. Lunar eclipse diagram: Vāsiṣṭha Pauliṣa. 17. —Āryabhaṭa's Midnight system. 18. —Bhāskara I. 19. —Lalla. 20. —Sūryasiddhānta. 21. —Bhāskara II. 22. —Karaṇaratna. 23. Solar eclipse: Computation: Pauliṣa. 24. —Romakasiddhānta. 25. —Saurasiddhānta. 26. —Āryabhaṭa's Midnight system. 27. —Bhāskara I. 28. —Lalla. 29. —Mahāsiddhānta. 30. —Bhāskara II. 31. —Karaṇaratna. 32. —Śrīpati. 33. —Grahalāghava. 34. —Solar eclipse diagram: Romakasiddhānta. 35. —Saurasiddhānta. 36. Colour of eclipses. 37. Conditions for non-prediction of eclipses. 38. —Inscriptional references: Lunar eclipses. 38. Solar eclipses.

##### 17. Phases of the Moon ... 241

1. Periodical appearance of the Moon. 2. Moon's luminosity. 3. Conditions of Moon's visibility. 4. Preliminaries for computation. 5. Visibility corrections: Ākṣa, Āyana and the Third. 6. Rising and setting of the Moon. 7. Moon's shadow. 8. Computation of Moon's cusps. 9. Moon's cusps—diagram.

##### 18. Heliacal rising and setting of Planets and Stars ... 254

1. Heliacal rising and setting of planets. 2. Days of rising and setting. 3. Planetary elongation for rising and setting. 4. Visibility corrections. 5. Computation of rising and setting. 6. Jupiter's rising and setting. 7. Venus: Rising and setting. 8. Rising and setting of a star. 9. Canopus: Rising.

##### 19. Conjunction of Planets ... 264

1. Types of planetary conjunctions. 2. Conjunction: Principle of computation. 3. Computation of conjunction.

##### 20. Conjunction of Stars and Planets ... 271

1. Conjunction of stars and planets. 2. Principle of planet-star conjunction. 3. Occultation of stars by planets. 4. Occultation of Rohiṇī by planets. 5. Occultation of stars by the Moon. 6. Time of star-planet conjunction.

#### V. INNOVATIVE TRENDS

##### 21. Novel Innovations ... 274

1. True longitude computation on the sphere of the zodiac. 2. Computation of True Moon. 3. Simplified astronomical procedures.

#### IV. OCCULTATION

##### 16. Eclipses ... 196

1. Cause stated in the Ṛgveda. 2. Cause of the lunar eclipse. 3. Lunar eclipse: Principle of computation. 4. Lunar eclipse computation: Vāsiṣṭha and Pauliṣa. 5. —Saurasiddhānta. 6. —Āryabhaṭīya. 7. —Āryabhaṭa's Midnight system. 8. —Emendation by Brahmagupta. 9. —Bhāskara I. 10. —Lalla. 11. —Bhāskara II. 12. —Karaṇaratna. 13. —Śrīpati. 14. —Vākyakaraṇa. 15. —Grahalāghava. 16. Lunar eclipse diagram: Vāsiṣṭha Pauliṣa. 17. —Āryabhaṭa's Midnight system. 18. —Bhāskara I. 19. —Lalla. 20. —Sūryasiddhānta. 21. —Bhāskara II. 22. —Karaṇaratna. 23. Solar eclipse: Computation: Pauliṣa. 24. —Romakasiddhānta. 25. —Saurasiddhānta. 26. —Āryabhaṭa's Midnight system. 27. —Bhāskara I. 28. —Lalla. 29. —Mahāsiddhānta. 30. —Bhāskara II. 31. —Karaṇaratna. 32. —Śrīpati. 33. —Grahalāghava. 34. —Solar eclipse diagram: Romakasiddhānta. 35. —Saurasiddhānta. 36. Colour of eclipses. 37. Conditions for non-prediction of eclipses. 38. —Inscriptional references: Lunar eclipses. 38. Solar eclipses.

##### 17. Phases of the Moon ... 241

1. Periodical appearance of the Moon. 2. Moon's luminosity. 3. Conditions of Moon's visibility. 4. Preliminaries for computation. 5. Visibility corrections: Ākṣa, Āyana and the Third. 6. Rising and setting of the Moon. 7. Moon's shadow. 8. Computation of Moon's cusps. 9. Moon's cusps—diagram.

##### 18. Heliacal rising and setting of Planets and Stars ... 254

1. Heliacal rising and setting of planets. 2. Days of rising and setting. 3. Planetary elongation for rising and setting. 4. Visibility corrections. 5. Computation of rising and setting. 6. Jupiter's rising and setting. 7. Venus: Rising and setting. 8. Rising and setting of a star. 9. Canopus: Rising.

##### 19. Conjunction of Planets ... 264

1. Types of planetary conjunctions. 2. Conjunction: Principle of computation. 3. Computation of conjunction.

##### 20. Conjunction of Stars and Planets ... 271

1. Conjunction of stars and planets. 2. Principle of planet-star conjunction. 3. Occultation of stars by planets. 4. Occultation of Rohiṇī by planets. 5. Occultation of stars by the Moon. 6. Time of star-planet conjunction.

#### V. INNOVATIVE TRENDS

##### 21. Novel Innovations ... 274

1. True longitude computation on the sphere of the zodiac. 2. Computation of True Moon. 3. Simplified astronomical procedures.

#### IV. OCCULTATION

##### 16. Eclipses ... 196

1. Cause stated in the Ṛgveda. 2. Cause of the lunar eclipse. 3. Lunar eclipse: Principle of computation. 4. Lunar eclipse computation: Vāsiṣṭha and Pauliṣa. 5. —Saurasiddhānta. 6. —Āryabhaṭīya. 7. —Āryabhaṭa's Midnight system. 8. —Emendation by Brahmagupta. 9. —Bhāskara I. 10. —Lalla. 11. —Bhāskara II. 12. —Karaṇaratna. 13. —Śrīpati. 14. —Vākyakaraṇa. 15. —Grahalāghava. 16. Lunar eclipse diagram: Vāsiṣṭha Pauliṣa. 17. —Āryabhaṭa's Midnight system. 18. —Bhāskara I. 19. —Lalla. 20. —Sūryasiddhānta. 21. —Bhāskara II. 22. —Karaṇaratna. 23. Solar eclipse: Computation: Pauliṣa. 24. —Romakasiddhānta. 25. —Saurasiddhānta. 26. —Āryabhaṭa's Midnight system. 27. —Bhāskara I. 28. —Lalla. 29. —Mahāsiddhānta. 30. —Bhāskara II. 31. —Karaṇaratna. 32. —Śrīpati. 33. —Grahalāghava. 34. —Solar eclipse diagram: Romakasiddhānta. 35. —Saurasiddhānta. 36. Colour of eclipses. 37. Conditions for non-prediction of eclipses. 38. —Inscriptional references: Lunar eclipses. 38. Solar eclipses.

##### 17. Phases of the Moon ... 241

1. Periodical appearance of the Moon. 2. Moon's luminosity. 3. Conditions of Moon's visibility. 4. Preliminaries for computation. 5. Visibility corrections: Ākṣa, Āyana and the Third. 6. Rising and setting of the Moon. 7. Moon's shadow. 8. Computation of Moon's cusps. 9. Moon's cusps—diagram.

##### 18. Heliacal rising and setting of Planets and Stars ... 254

1. Heliacal rising and setting of planets. 2. Days of rising and setting. 3. Planetary elongation for rising and setting. 4. Visibility corrections. 5. Computation of rising and setting. 6. Jupiter's rising and setting. 7. Venus: Rising and setting. 8. Rising and setting of a star. 9. Canopus: Rising.

##### 19. Conjunction of Planets ... 264

1. Types of planetary conjunctions. 2. Conjunction: Principle of computation. 3. Computation of conjunction.

##### 20. Conjunction of Stars and Planets ... 271

1. Conjunction of stars and planets. 2. Principle of planet-star conjunction. 3. Occultation of stars by planets. 4. Occultation of Rohiṇī by planets. 5. Occultation of stars by the Moon. 6. Time of star-planet conjunction.

#### V. INNOVATIVE TRENDS

##### 21. Novel Innovations ... 274

1. True longitude computation on the sphere of the zodiac. 2. Computation of True Moon. 3. Simplified astronomical procedures.

#### IV. OCCULTATION

##### 16. Eclipses ... 196

1. Cause stated in the Ṛgveda. 2. Cause of the lunar eclipse. 3. Lunar eclipse: Principle of computation. 4. Lunar eclipse computation: Vāsiṣṭha and Pauliṣa. 5. —Saurasiddhānta. 6. —Āryabhaṭīya. 7. —Āryabhaṭa's Midnight system. 8. —Emendation by Brahmagupta. 9. —Bhāskara I. 10. —Lalla. 11. —Bhāskara II. 12. —Karaṇaratna. 13. —Śrīpati. 14. —Vākyakaraṇa. 15. —Grahalāghava. 16. Lunar eclipse diagram: Vāsiṣṭha Pauliṣa. 17. —Āryabhaṭa's Midnight system. 18. —Bhāskara I. 19. —Lalla. 20. —Sūryasiddhānta. 21. —Bhāskara II. 22. —Karaṇaratna. 23. Solar eclipse: Computation: Pauliṣa. 24. —Romakasiddhānta. 25. —Saurasiddhānta. 26. —Āryabhaṭa's Midnight system. 27. —Bhāskara I. 28. —Lalla. 29. —Mahāsiddhānta. 30. —Bhāskara II. 31. —Karaṇaratna. 32. —Śrīpati. 33. —Grahalāghava. 34. —Solar eclipse diagram: Romakasiddhānta. 35. —Saurasiddhānta. 36. Colour of eclipses. 37. Conditions for non-prediction of eclipses. 38. —Inscriptional references: Lunar eclipses. 38. Solar eclipses.

##### 17. Phases of the Moon ... 241

1. Periodical appearance of the Moon. 2. Moon's luminosity. 3. Conditions of Moon's visibility. 4. Preliminaries for computation. 5. Visibility corrections: Ākṣa, Āyana and the Third. 6. Rising and setting of the Moon. 7. Moon's shadow. 8. Computation of Moon's cusps. 9. Moon's cusps—diagram.

##### 18. Heliacal rising and setting of Planets and Stars ... 254

1. Heliacal rising and setting of planets. 2. Days of rising and setting. 3. Planetary elongation for rising and setting. 4. Visibility corrections. 5. Computation of rising and setting. 6. Jupiter's rising and setting. 7. Venus: Rising and setting. 8. Rising and setting of a star. 9. Canopus: Rising.

##### 19. Conjunction of Planets ... 264

1. Types of planetary conjunctions. 2. Conjunction: Principle of computation. 3. Computation of conjunction.

##### 20. Conjunction of Stars and Planets ... 271

1. Conjunction of stars and planets. 2. Principle of planet-star conjunction. 3. Occultation of stars by planets. 4. Occultation of Rohiṇī by planets. 5. Occultation of stars by the Moon. 6. Time of star-planet conjunction.

#### V. INNOVATIVE TRENDS

##### 21. Novel Innovations ... 274

1. True longitude computation on the sphere of the zodiac. 2. Computation of True Moon. 3. Simplified astronomical procedures.



#### IV. OCCULTATION

##### 16. Eclipses ... 196

1. Cause stated in the Ṛgveda. 2. Cause of the lunar eclipse. 3. Lunar eclipse: Principle of computation. 4. Lunar eclipse computation: Vāsiṣṭha and Pauliṣa. 5. —Saurasiddhānta. 6. —Āryabhaṭīya. 7. —Āryabhaṭa's Midnight system. 8. —Emendation by Brahmagupta. 9. —Bhāskara I. 10. —Lalla. 11. —Bhāskara II. 12. —Karaṇaratna. 13. —Śrīpati. 14. —Vākyakaraṇa. 15. —Grahalāghava. 16. Lunar eclipse diagram: Vāsiṣṭha Pauliṣa. 17. —Āryabhaṭa's Midnight system. 18. —Bhāskara I. 19. —Lalla. 20. —Sūryasiddhānta. 21. —Bhāskara II. 22. —Karaṇaratna. 23. Solar eclipse: Computation: Pauliṣa. 24. —Romakasiddhānta. 25. —Saurasiddhānta. 26. —Āryabhaṭa's Midnight system. 27. —Bhāskara I. 28. —Lalla. 29. —Mahāsiddhānta. 30. —Bhāskara II. 31. —Karaṇaratna. 32. —Śrīpati. 33. —Grahalāghava. 34. —Solar eclipse diagram: Romakasiddhānta. 35. —Saurasiddhānta. 36. Colour of eclipses. 37. Conditions for non-prediction of eclipses. 38. —Inscriptional references: Lunar eclipses. 38. Solar eclipses.

##### 17. Phases of the Moon ... 241

1. Periodical appearance of the Moon. 2. Moon's luminosity. 3. Conditions of Moon's visibility. 4. Preliminaries for computation. 5. Visibility corrections: Ākṣa, Āyana and the Third. 6. Rising and setting of the Moon. 7. Moon's shadow. 8. Computation of Moon's cusps. 9. Moon's cusps—diagram.

##### 18. Heliacal rising and setting of Planets and Stars ... 254

1. Heliacal rising and setting of planets. 2. Days of rising and setting. 3. Planetary elongation for rising and setting. 4. Visibility corrections. 5. Computation of rising and setting. 6. Jupiter's rising and setting. 7. Venus: Rising and setting. 8. Rising and setting of a star. 9. Canopus: Rising.

##### 19. Conjunction of Planets ... 264

1. Types of planetary conjunctions. 2. Conjunction: Principle of computation. 3. Computation of conjunction.

##### 20. Conjunction of Stars and Planets ... 271

1. Conjunction of stars and planets. 2. Principle of planet-star conjunction. 3. Occultation of stars by planets. 4. Occultation of Rohiṇī by planets. 5. Occultation of stars by the Moon. 6. Time of star-planet conjunction.

#### V. INNOVATIVE TRENDS

##### 21. Novel Innovations ... 274

1. True longitude computation on the sphere of the zodiac. 2. Computation of True Moon. 3. Simplified astronomical procedures.

#### IV. OCCULTATION

##### 16. Eclipses ... 196

1. Cause stated in the Ṛgveda. 2. Cause of the lunar eclipse. 3. Lunar eclipse: Principle of computation. 4. Lunar eclipse computation: Vāsiṣṭha and Pauliṣa. 5. —Saurasiddhānta. 6. —Āryabhaṭīya. 7. —Āryabhaṭa's Midnight system. 8. —Emendation by Brahmagupta. 9. —Bhāskara I. 10. —Lalla. 11. —Bhāskara II. 12. —Karaṇaratna. 13. —Śrīpati. 14. —Vākyakaraṇa. 15. —Grahalāghava. 16. Lunar eclipse diagram: Vāsiṣṭha Pauliṣa. 17. —Āryabhaṭa's Midnight system. 18. —Bhāskara I. 19. —Lalla. 20. —Sūryasiddhānta. 21. —Bhāskara II. 22. —Karaṇaratna. 23. Solar eclipse: Computation: Pauliṣa. 24. —Romakasiddhānta. 25. —Saurasiddhānta. 26. —Āryabhaṭa's Midnight system. 27. —Bhāskara I. 28. —Lalla. 29. —Mahāsiddhānta. 30. —Bhāskara II. 31. —Karaṇaratna. 32. —Śrīpati. 33. —Grahalāghava. 34. —Solar eclipse diagram: Romakasiddhānta. 35. —Saurasiddhānta. 36. Colour of eclipses. 37. Conditions for non-prediction of eclipses. 38. —Inscriptional references: Lunar eclipses. 38. Solar eclipses.

##### 17. Phases of the Moon ... 241

1. Periodical appearance of the Moon. 2. Moon's luminosity. 3. Conditions of Moon's visibility. 4. Preliminaries for computation. 5. Visibility corrections: Ākṣa, Āyana and the Third. 6. Rising and setting of the Moon. 7. Moon's shadow. 8. Computation of Moon's cusps. 9. Moon's cusps—diagram.

##### 18. Heliacal rising and setting of Planets and Stars ... 254

1. Heliacal rising and setting of planets. 2. Days of rising and setting. 3. Planetary elongation for rising and setting. 4. Visibility corrections. 5. Computation of rising and setting. 6. Jupiter's rising and setting. 7. Venus: Rising and setting. 8. Rising and setting of a star. 9. Canopus: Rising.

##### 19. Conjunction of Planets ... 264

1. Types of planetary conjunctions. 2. Conjunction: Principle of computation. 3. Computation of conjunction.

##### 20. Conjunction of Stars and Planets ... 271

1. Conjunction of stars and planets. 2. Principle of planet-star conjunction. 3. Occultation of stars by planets. 4. Occultation of Rohiṇī by planets. 5. Occultation of stars by the Moon. 6. Time of star-planet conjunction.

#### V. INNOVATIVE TRENDS

##### 21. Novel Innovations ... 274

1. True longitude computation on the sphere of the zodiac. 2. Computation of True Moon. 3. Simplified astronomical procedures.

#### IV. OCCULTATION

##### 16. Eclipses ... 196

1. Cause stated in the Ṛgveda. 2. Cause of the lunar eclipse. 3. Lunar eclipse: Principle of computation. 4. Lunar eclipse computation: Vāsiṣṭha and Pauliṣa. 5. —Saurasiddhānta. 6. —Āryabhaṭīya. 7. —Āryabhaṭa's Midnight system. 8. —Emendation by Brahmagupta. 9. —Bhāskara I. 10. —Lalla. 11. —Bhāskara II. 12. —Karaṇaratna. 13. —Śrīpati. 14. —Vākyakaraṇa. 15. —Grahalāghava. 16. Lunar eclipse diagram: Vāsiṣṭha Pauliṣa. 17. —Āryabhaṭa's Midnight system. 18. —Bhāskara I. 19. —Lalla. 20. —Sūryasiddhānta. 21. —Bhāskara II. 22. —Karaṇaratna. 23. Solar eclipse: Computation: Pauliṣa. 24. —Romakasiddhānta. 25. —Saurasiddhānta. 26. —Āryabhaṭa's Midnight system. 27. —Bhāskara I. 28. —Lalla. 29. —Mahāsiddhānta. 30. —Bhāskara II. 31. —Karaṇaratna. 32. —Śrīpati. 33. —Grahalāghava. 34. —Solar eclipse diagram: Romakasiddhānta. 35. —Saurasiddhānta. 36. Colour of eclipses. 37. Conditions for non-prediction of eclipses. 38. —Inscriptional references: Lunar eclipses. 38. Solar eclipses.

##### 17. Phases of the Moon ... 241

1. Periodical appearance of the Moon. 2. Moon's luminosity. 3. Conditions of Moon's visibility. 4. Preliminaries for computation. 5. Visibility corrections: Ākṣa, Āyana and the Third. 6. Rising and setting of the Moon. 7. Moon's shadow. 8. Computation of Moon's cusps. 9. Moon's cusps—diagram.

##### 18. Heliacal rising and setting of Planets and Stars ... 254

1. Heliacal rising and setting of planets. 2. Days of rising and setting. 3. Planetary elongation for rising and setting. 4. Visibility corrections. 5. Computation of rising and setting. 6. Jupiter's rising and setting. 7. Venus: Rising and setting. 8. Rising and setting of a star. 9. Canopus: Rising.

##### 19. Conjunction of Planets ... 264

1. Types of planetary conjunctions. 2. Conjunction: Principle of computation. 3. Computation of conjunction.

##### 20. Conjunction of Stars and Planets ... 271

1. Conjunction of stars and planets. 2. Principle of planet-star conjunction. 3. Occultation of stars by planets. 4. Occultation of Rohiṇī by planets. 5. Occultation of stars by the Moon. 6. Time of star-planet conjunction.

#### V. INNOVATIVE TRENDS

##### 21. Novel Innovations ... 274

1. True longitude computation on the sphere of the zodiac. 2. Computation of True Moon. 3. Simplified astronomical procedures.

#### IV. OCCULTATION

##### 16. Eclipses ... 196

1. Cause stated in the Ṛgveda. 2. Cause of the lunar eclipse. 3. Lunar eclipse: Principle of computation. 4. Lunar eclipse computation: Vāsiṣṭha and Pauliṣa. 5. —Saurasiddhānta. 6. —Āryabhaṭīya. 7. —Āryabhaṭa's Midnight system. 8. —Emendation by Brahmagupta. 9. —Bhāskara I. 10. —Lalla. 11. —Bhāskara II. 12. —Karaṇaratna. 13. —Śrīpati. 14. —Vākyakaraṇa. 15. —Grahalāghava. 16. Lunar eclipse diagram: Vāsiṣṭha Pauliṣa. 17. —Āryabhaṭa's Midnight system. 18. —Bhāskara I. 19. —Lalla. 20. —Sūryasiddhānta. 21. —Bhāskara II. 22. —Karaṇaratna. 23. Solar eclipse: Computation: Pauliṣa. 24. —Romakasiddhānta. 25. —Saurasiddhānta. 26. —Āryabhaṭa's Midnight system. 27. —Bhāskara I. 28. —Lalla. 29. —Mahāsiddhānta. 30. —Bhāskara II. 31. —Karaṇaratna. 32. —Śrīpati. 33. —Grahalāghava. 34. —Solar eclipse diagram: Romakasiddhānta. 35. —Saurasiddhānta. 36. Colour of eclipses. 37. Conditions for non-prediction of eclipses. 38. —Inscriptional references: Lunar eclipses. 38. Solar eclipses.

##### 17. Phases of the Moon ... 241

1. Periodical appearance of the Moon. 2. Moon's luminosity. 3. Conditions of Moon's visibility. 4. Preliminaries for computation. 5. Visibility corrections: Ākṣa, Āyana and the Third. 6. Rising and setting of the Moon. 7. Moon's shadow. 8. Computation of Moon's cusps. 9. Moon's cusps—diagram.

##### 18. Heliacal rising and setting of Planets and Stars ... 254

1. Heliacal rising and setting of planets. 2. Days of rising and setting. 3. Planetary elongation for rising and setting. 4. Visibility corrections. 5. Computation of rising and setting. 6. Jupiter's rising and setting. 7. Venus: Rising and setting. 8. Rising and setting of a star. 9. Canopus: Rising.

##### 19. Conjunction of Planets ... 264

1. Types of planetary conjunctions. 2. Conjunction: Principle of computation. 3. Computation of conjunction.

##### 20. Conjunction of Stars and Planets ... 271

1. Conjunction of stars and planets. 2. Principle of planet-star conjunction. 3. Occultation of stars by planets. 4. Occultation of Rohiṇī by planets. 5. Occultation of stars by the Moon. 6. Time of star-planet conjunction.

#### V. INNOVATIVE TRENDS

##### 21. Novel Innovations ... 274

1. True longitude computation on the sphere of the zodiac. 2. Computation of True Moon. 3. Simplified astronomical procedures.

#### IV. OCCULTATION

##### 16. Eclipses ... 196

1. Cause stated in the Ṛgveda. 2. Cause of the lunar eclipse. 3. Lunar eclipse: Principle of computation. 4. Lunar eclipse computation: Vāsiṣṭha and Pauliṣa. 5. —Saurasiddhānta. 6. —Āryabhaṭīya. 7. —Āryabhaṭa's Midnight system. 8. —Emendation by Brahmagupta. 9. —Bhāskara I. 10. —Lalla. 11. —Bhāskara II. 12. —Karaṇaratna. 13. —Śrīpati. 14. —Vākyakaraṇa. 15. —Grahalāghava. 16. Lunar eclipse diagram: Vāsiṣṭha Pauliṣa. 17. —Āryabhaṭa's Midnight system. 18. —Bhāskara I. 19. —Lalla. 20. —Sūryasiddhānta. 21. —Bhāskara II. 22. —Karaṇaratna. 23. Solar eclipse: Computation: Pauliṣa. 24. —Romakasiddhānta. 25. —Saurasiddhānta. 26. —Āryabhaṭa's Midnight system. 27. —Bhāskara I. 28. —Lalla. 29. —Mahāsiddhānta. 30. —Bhāskara II. 31. —Karaṇaratna. 32. —Śrīpati. 33. —Grahalāghava. 34. —Solar eclipse diagram: Romakasiddhānta. 35. —Saurasiddhānta. 36. Colour of eclipses. 37. Conditions for non-prediction of eclipses. 38. —Inscriptional references: Lunar eclipses. 38. Solar eclipses.

##### 17. Phases of the Moon ... 241

1. Periodical appearance of the Moon. 2. Moon's luminosity. 3. Conditions of Moon's visibility. 4. Preliminaries for computation. 5. Visibility corrections: Ākṣa, Āyana and the Third. 6. Rising and setting of the Moon. 7. Moon's shadow. 8. Computation of Moon's cusps. 9. Moon's cusps—diagram.

##### 18. Heliacal rising and setting of Planets and Stars ... 254

1. Heliacal rising and setting of planets. 2. Days of rising and setting. 3. Planetary elongation for rising and setting. 4. Visibility corrections. 5. Computation of rising and setting. 6. Jupiter's rising and setting. 7. Venus: Rising and setting. 8. Rising and setting of a star. 9. Canopus: Rising.

##### 19. Conjunction of Planets ... 264

1. Types of planetary conjunctions. 2. Conjunction: Principle of computation. 3. Computation of conjunction.

##### 20. Conjunction of Stars and Planets ... 271

1. Conjunction of stars and planets. 2. Principle of planet-star conjunction. 3. Occultation of stars by planets. 4. Occultation of Rohiṇī by planets. 5. Occultation of stars by the Moon. 6. Time of star-planet conjunction.

#### V. INNOVATIVE TRENDS

##### 21. Novel Innovations ... 274

1. True longitude computation on the sphere of the zodiac. 2. Computation of True Moon. 3. Simplified astronomical procedures.

#### IV. OCCULTATION

##### 16. Eclipses ... 196

1. Cause stated in the Ṛgveda. 2. Cause of the lunar eclipse. 3. Lunar eclipse: Principle of computation. 4. Lunar eclipse computation: Vāsiṣṭha and Pauliṣa. 5. —Saurasiddhānta. 6. —Āryabhaṭīya. 7. —Āryabhaṭa's Midnight system. 8. —Emendation by Brahmagupta. 9. —Bhāskara I. 10. —Lalla. 11. —Bhāskara II. 12. —Karaṇaratna. 13. —Śrīpati. 14. —Vākyakaraṇa. 15. —Grahalāghava. 16. Lunar eclipse diagram: Vāsiṣṭha Pauliṣa. 17. —Āryabhaṭa's Midnight system. 18. —Bhāskara I. 19. —Lalla. 20. —Sūryasiddhānta. 21. —Bhāskara II. 22. —Karaṇaratna. 23. Solar eclipse: Computation: Pauliṣa. 24. —Romakasiddhānta. 25. —Saurasiddhānta. 26. —Āryabhaṭa's Midnight system. 27. —Bhāskara I. 28. —Lalla. 29. —Mahāsiddhānta. 30. —Bhāskara II. 31. —Karaṇaratna. 32. —Śrīpati. 33. —Grahalāghava. 34. —Solar eclipse diagram: Romakasiddhānta. 35. —Saurasiddhānta. 36. Colour of eclipses. 37. Conditions for non-prediction of eclipses. 38. —Inscriptional references: Lunar eclipses. 38. Solar eclipses.

##### 17. Phases of the Moon ... 241

1. Periodical appearance of the Moon. 2. Moon's luminosity. 3. Conditions of Moon's visibility. 4. Preliminaries for computation. 5. Visibility corrections: Ākṣa, Āyana and the Third. 6. Rising and setting of the Moon. 7. Moon's shadow. 8. Computation of Moon's cusps. 9. Moon's cusps—diagram.

##### 18. Heliacal rising and setting of Planets and Stars ... 254

1. Heliacal rising and setting of planets. 2. Days of rising and setting. 3. Planetary elongation for rising and setting. 4. Visibility corrections. 5. Computation of rising and setting. 6. Jupiter's rising and setting. 7. Venus: Rising and setting. 8. Rising and setting of a star. 9. Canopus: Rising.

##### 19. Conjunction of Planets ... 264

1. Types of planetary conjunctions. 2. Conjunction: Principle of computation. 3. Computation of conjunction.

##### 20. Conjunction of Stars and Planets ... 271

1. Conjunction of stars and planets. 2. Principle of planet-star conjunction. 3. Occultation of stars by planets. 4. Occultation of Rohiṇī by planets. 5. Occultation of stars by the Moon. 6. Time of star-planet conjunction.

#### V. INNOVATIVE TRENDS

##### 21. Novel Innovations ... 274

1. True longitude computation on the sphere of the zodiac. 2. Computation of True Moon. 3. Simplified astronomical procedures.

#### IV. OCCULTATION

##### 16. Eclipses ... 196

1. Cause stated in the Ṛgveda. 2. Cause of the lunar eclipse. 3. Lunar eclipse: Principle of computation. 4. Lunar eclipse computation: Vāsiṣṭha and Pauliṣa. 5. —Saurasiddhānta. 6. —Āryabhaṭīya. 7. —Āryabhaṭa's Midnight system. 8. —Emendation by Brahmagupta. 9. —Bhāskara I. 10. —Lalla. 11. —Bhāskara II. 12. —Karaṇaratna. 13. —Śrīpati. 14. —Vākyakaraṇa. 15. —Grahalāghava. 16. Lunar eclipse diagram: Vāsiṣṭha Pauliṣa. 17. —Āryabhaṭa's Midnight system. 18. —Bhāskara I. 19. —Lalla. 20. —Sūryasiddhānta. 21. —Bhāskara II. 22. —Karaṇaratna. 23. Solar eclipse: Computation: Pauliṣa. 24. —Romakasiddhānta. 25. —Saurasiddhānta. 26. —Āryabhaṭa's Midnight system. 27. —Bhāskara I. 28. —Lalla. 29. —Mahāsiddhānta. 30. —Bhāskara II. 31. —Karaṇaratna. 32. —Śrīpati. 33. —Grahalāghava. 34. —Solar eclipse diagram: Romakasiddhānta. 35. —Saurasiddhānta. 36. Colour of eclipses. 37. Conditions for non-prediction of eclipses. 38. —Inscriptional references: Lunar eclipses. 38. Solar eclipses.

##### 17. Phases of the Moon ... 241

1. Periodical appearance of the Moon. 2. Moon's luminosity. 3. Conditions of Moon's visibility. 4. Preliminaries for computation. 5. Visibility corrections: Ākṣa, Āyana and the Third. 6. Rising and setting of the Moon. 7. Moon's shadow. 8. Computation of Moon's cusps. 9. Moon's cusps—diagram.

##### 18. Heliacal rising and setting of Planets and Stars ... 254

1. Heliacal rising and setting of planets. 2. Days of rising and setting. 3. Planetary elongation for rising and setting. 4. Visibility corrections. 5. Computation of rising and setting. 6. Jupiter's rising and setting. 7. Venus: Rising and setting. 8. Rising and setting of a star. 9. Canopus: Rising.

##### 19. Conjunction of Planets ... 264

1. Types of planetary conjunctions. 2. Conjunction: Principle of computation. 3. Computation of conjunction.

##### 20. Conjunction of Stars and Planets ... 271

1. Conjunction of stars and planets. 2. Principle of planet-star conjunction. 3. Occultation of stars by planets. 4. Occultation of Rohiṇī by planets. 5. Occultation of stars by the Moon. 6. Time of star-planet conjunction.

#### V. INNOVATIVE TRENDS

##### 21. Novel Innovations ... 274

1. True longitude computation on the sphere of the zodiac. 2. Computation of True Moon. 3. Simplified astronomical procedures.

#### IV. OCCULTATION

##### 16. Eclipses ... 196

1. Cause stated in the Ṛgveda. 2. Cause of the lunar eclipse. 3. Lunar eclipse: Principle of computation. 4. Lunar eclipse computation: Vāsiṣṭha and Pauliṣa. 5. —Saurasiddhānta. 6. —Āryabhaṭīya. 7. —Āryabhaṭa's Midnight system. 8. —Emendation by Brahmagupta. 9. —Bhāskara I. 10. —Lalla. 11. —Bhāskara II. 12. —Karaṇaratna. 13. —Śrīpati. 14. —Vākyakaraṇa. 15. —Grahalāghava. 16. Lunar eclipse diagram: Vāsiṣṭha Pauliṣa. 17. —Āryabhaṭa's Midnight system. 18. —Bhāskara I. 19. —Lalla. 20. —Sūryasiddhānta. 21. —Bhāskara II. 22. —Karaṇaratna. 23. Solar eclipse: Computation: Pauliṣa. 24. —Romakasiddhānta. 25. —Saurasiddhānta. 26. —Āryabhaṭa's Midnight system. 27. —Bhāskara I. 28. —Lalla. 29. —Mahāsiddhānta. 30. —Bhāskara II. 31. —Karaṇaratna. 32. —Śrīpati. 33. —Grahalāghava. 34. —Solar eclipse diagram: Romakasiddhānta. 35. —Saurasiddhānta. 36. Colour of eclipses. 37. Conditions for non-prediction of eclipses. 38. —Inscriptional references: Lunar eclipses. 38. Solar eclipses.

##### 17. Phases of the Moon ... 241

1. Periodical appearance of the Moon. 2. Moon's luminosity. 3. Conditions of Moon's visibility. 4. Preliminaries for computation. 5. Visibility corrections: Ākṣa, Āyana and the Third. 6. Rising and setting of the Moon. 7. Moon's shadow. 8. Computation of Moon's cusps. 9. Moon's cusps—diagram.

##### 18. Heliacal rising and setting of Planets and Stars ... 254

1. Heliacal rising and setting of planets. 2. Days of rising and setting. 3. Planetary elongation for rising and setting. 4. Visibility corrections. 5. Computation of rising and setting. 6. Jupiter's rising and setting. 7. Venus: Rising and setting. 8. Rising and setting of a star. 9. Canopus: Rising.

##### 19. Conjunction of Planets ... 264

1. Types of planetary conjunctions. 2. Conjunction: Principle of computation. 3. Computation of conjunction.

##### 20. Conjunction of Stars and Planets ... 271

1. Conjunction of stars and planets. 2. Principle of planet-star conjunction. 3. Occultation of stars by planets. 4. Occultation of Rohiṇī by planets. 5. Occultation of stars by the Moon. 6. Time of star-planet conjunction.

#### V. INNOVATIVE TRENDS

##### 21. Novel Innovations ... 274

1. True longitude computation on the sphere of the zodiac. 2. Computation of True Moon. 3. Simplified astronomical procedures.



#### IV. OCCULTATION

##### 16. Eclipses ... 196

1. Cause stated in the Ṛgveda. 2. Cause of the lunar eclipse. 3. Lunar eclipse: Principle of computation. 4. Lunar eclipse computation: Vāsiṣṭha and Pauliṣa. 5. —Saurasiddhānta. 6. —Āryabhaṭīya. 7. —Āryabhaṭa's Midnight system. 8. —Emendation by Brahmagupta. 9. —Bhāskara I. 10. —Lalla. 11. —Bhāskara II. 12. —Karaṇaratna. 13. —Śrīpati. 14. —Vākyakaraṇa. 15. —Grahalāghava. 16. Lunar eclipse diagram: Vāsiṣṭha Pauliṣa. 17. —Āryabhaṭa's Midnight system. 18. —Bhāskara I. 19. —Lalla. 20. —Sūryasiddhānta. 21. —Bhāskara II. 22. —Karaṇaratna. 23. Solar eclipse: Computation: Pauliṣa. 24. —Romakasiddhānta. 25. —Saurasiddhānta. 26. —Āryabhaṭa's Midnight system. 27. —Bhāskara I. 28. —Lalla. 29. —Mahāsiddhānta. 30. —Bhāskara II. 31. —Karaṇaratna. 32. —Śrīpati. 33. —Grahalāghava. 34. —Solar eclipse diagram: Romakasiddhānta. 35. —Saurasiddhānta. 36. Colour of eclipses. 37. Conditions for non-prediction of eclipses. 38. —Inscriptional references: Lunar eclipses. 38. Solar eclipses.

##### 17. Phases of the Moon ... 241

1. Periodical appearance of the Moon. 2. Moon's luminosity. 3. Conditions of Moon's visibility. 4. Preliminaries for computation. 5. Visibility corrections: Ākṣa, Āyana and the Third. 6. Rising and setting of the Moon. 7. Moon's shadow. 8. Computation of Moon's cusps. 9. Moon's cusps—diagram.

##### 18. Heliacal rising and setting of Planets and Stars ... 254

1. Heliacal rising and setting of planets. 2. Days of rising and setting. 3. Planetary elongation for rising and setting. 4. Visibility corrections. 5. Computation of rising and setting. 6. Jupiter's rising and setting. 7. Venus: Rising and setting. 8. Rising and setting of a star. 9. Canopus: Rising.

##### 19. Conjunction of Planets ... 264

1. Types of planetary conjunctions. 2. Conjunction: Principle of computation. 3. Computation of conjunction.

##### 20. Conjunction of Stars and Planets ... 271

1. Conjunction of stars and planets. 2. Principle of planet-star conjunction. 3. Occultation of stars by planets. 4. Occultation of Rohiṇī by planets. 5. Occultation of stars by the Moon. 6. Time of star-planet conjunction.

#### V. INNOVATIVE TRENDS

##### 21. Novel Innovations ... 274

1. True longitude computation on the sphere of the zodiac. 2. Computation of True Moon. 3. Simplified astronomical procedures.

#### IV. OCCULTATION

##### 16. Eclipses ... 196

1. Cause stated in the Ṛgveda. 2. Cause of the lunar eclipse. 3. Lunar eclipse: Principle of computation. 4. Lunar eclipse computation: Vāsiṣṭha and Pauliṣa. 5. —Saurasiddhānta. 6. —Āryabhaṭīya. 7. —Āryabhaṭa's Midnight system. 8. —Emendation by Brahmagupta. 9. —Bhāskara I. 10. —Lalla. 11. —Bhāskara II. 12. —Karaṇaratna. 13. —Śrīpati. 14. —Vākyakaraṇa. 15. —Grahalāghava. 16. Lunar eclipse diagram: Vāsiṣṭha Pauliṣa. 17. —Āryabhaṭa's Midnight system. 18. —Bhāskara I. 19. —Lalla. 20. —Sūryasiddhānta. 21. —Bhāskara II. 22. —Karaṇaratna. 23. Solar eclipse: Computation: Pauliṣa. 24. —Romakasiddhānta. 25. —Saurasiddhānta. 26. —Āryabhaṭa's Midnight system. 27. —Bhāskara I. 28. —Lalla. 29. —Mahāsiddhānta. 30. —Bhāskara II. 31. —Karaṇaratna. 32. —Śrīpati. 33. —Grahalāghava. 34. —Solar eclipse diagram: Romakasiddhānta. 35. —Saurasiddhānta. 36. Colour of eclipses. 37. Conditions for non-prediction of eclipses. 38. —Inscriptional references: Lunar eclipses. 38. Solar eclipses.

##### 17. Phases of the Moon ... 241

1. Periodical appearance of the Moon. 2. Moon's luminosity. 3. Conditions of Moon's visibility. 4. Preliminaries for computation. 5. Visibility corrections: Ākṣa, Āyana and the Third. 6. Rising and setting of the Moon. 7. Moon's shadow. 8. Computation of Moon's cusps. 9. Moon's cusps—diagram.

##### 18. Heliacal rising and setting of Planets and Stars ... 254

1. Heliacal rising and setting of planets. 2. Days of rising and setting. 3. Planetary elongation for rising and setting. 4. Visibility corrections. 5. Computation of rising and setting. 6. Jupiter's rising and setting. 7. Venus: Rising and setting. 8. Rising and setting of a star. 9. Canopus: Rising.

##### 19. Conjunction of Planets ... 264

1. Types of planetary conjunctions. 2. Conjunction: Principle of computation. 3. Computation of conjunction.

##### 20. Conjunction of Stars and Planets ... 271

1. Conjunction of stars and planets. 2. Principle of planet-star conjunction. 3. Occultation of stars by planets. 4. Occultation of Rohiṇī by planets. 5. Occultation of stars by the Moon. 6. Time of star-planet conjunction.

#### V. INNOVATIVE TRENDS

##### 21. Novel Innovations ... 274

1. True longitude computation on the sphere of the zodiac. 2. Computation of True Moon. 3. Simplified astronomical procedures.

#### IV. OCCULTATION

##### 16. Eclipses ... 196

1. Cause stated in the Ṛgveda. 2. Cause of the lunar eclipse. 3. Lunar eclipse: Principle of computation. 4. Lunar eclipse computation: Vāsiṣṭha and Pauliṣa. 5. —Saurasiddhānta. 6. —Āryabhaṭīya. 7. —Āryabhaṭa's Midnight system. 8. —Emendation by Brahmagupta. 9. —Bhāskara I. 10. —Lalla. 11. —Bhāskara II. 12. —Karaṇaratna. 13. —Śrīpati. 14. —Vākyakaraṇa. 15. —Grahalāghava. 16. Lunar eclipse diagram: Vāsiṣṭha Pauliṣa. 17. —Āryabhaṭa's Midnight system. 18. —Bhāskara I. 19. —Lalla. 20. —Sūryasiddhānta. 21. —Bhāskara II. 22. —Karaṇaratna. 23. Solar eclipse: Computation: Pauliṣa. 24. —Romakasiddhānta. 25. —Saurasiddhānta. 26. —Āryabhaṭa's Midnight system. 27. —Bhāskara I. 28. —Lalla. 29. —Mahāsiddhānta. 30. —Bhāskara II. 31. —Karaṇaratna. 32. —Śrīpati. 33. —Grahalāghava. 34. —Solar eclipse diagram: Romakasiddhānta. 35. —Saurasiddhānta. 36. Colour of eclipses. 37. Conditions for non-prediction of eclipses. 38. —Inscriptional references: Lunar eclipses. 38. Solar eclipses.

##### 17. Phases of the Moon ... 241

1. Periodical appearance of the Moon. 2. Moon's luminosity. 3. Conditions of Moon's visibility. 4. Preliminaries for computation. 5. Visibility corrections: Ākṣa, Āyana and the Third. 6. Rising and setting of the Moon. 7. Moon's shadow. 8. Computation of Moon's cusps. 9. Moon's cusps—diagram.

##### 18. Heliacal rising and setting of Planets and Stars ... 254

1. Heliacal rising and setting of planets. 2. Days of rising and setting. 3. Planetary elongation for rising and setting. 4. Visibility corrections. 5. Computation of rising and setting. 6. Jupiter's rising and setting. 7. Venus: Rising and setting. 8. Rising and setting of a star. 9. Canopus: Rising.

##### 19. Conjunction of Planets ... 264

1. Types of planetary conjunctions. 2. Conjunction: Principle of computation. 3. Computation of conjunction.

##### 20. Conjunction of Stars and Planets ... 271

1. Conjunction of stars and planets. 2. Principle of planet-star conjunction. 3. Occultation of stars by planets. 4. Occultation of Rohiṇī by planets. 5. Occultation of stars by the Moon. 6. Time of star-planet conjunction.

#### V. INNOVATIVE TRENDS

##### 21. Novel Innovations ... 274

1. True longitude computation on the sphere of the zodiac. 2. Computation of True Moon. 3. Simplified astronomical procedures.

#### IV. OCCULTATION

##### 16. Eclipses ... 196

1. Cause stated in the Ṛgveda. 2. Cause of the lunar eclipse. 3. Lunar eclipse: Principle of computation. 4. Lunar eclipse computation: Vāsiṣṭha and Pauliṣa. 5. —Saurasiddhānta. 6. —Āryabhaṭīya. 7. —Āryabhaṭa's Midnight system. 8. —Emendation by Brahmagupta. 9. —Bhāskara I. 10. —Lalla. 11. —Bhāskara II. 12. —Karaṇaratna. 13. —Śrīpati. 14. —Vākyakaraṇa. 15. —Grahalāghava. 16. Lunar eclipse diagram: Vāsiṣṭha Pauliṣa. 17. —Āryabhaṭa's Midnight system. 18. —Bhāskara I. 19. —Lalla. 20. —Sūryasiddhānta. 21. —Bhāskara II. 22. —Karaṇaratna. 23. Solar eclipse: Computation: Pauliṣa. 24. —Romakasiddhānta. 25. —Saurasiddhānta. 26. —Āryabhaṭa's Midnight system. 27. —Bhāskara I. 28. —Lalla. 29. —Mahāsiddhānta. 30. —Bhāskara II. 31. —Karaṇaratna. 32. —Śrīpati. 33. —Grahalāghava. 34. —Solar eclipse diagram: Romakasiddhānta. 35. —Saurasiddhānta. 36. Colour of eclipses. 37. Conditions for non-prediction of eclipses. 38. —Inscriptional references: Lunar eclipses. 38. Solar eclipses.

##### 17. Phases of the Moon ... 241

1. Periodical appearance of the Moon. 2. Moon's luminosity. 3. Conditions of Moon's visibility. 4. Preliminaries for computation. 5. Visibility corrections: Ākṣa, Āyana and the Third. 6. Rising and setting of the Moon. 7. Moon's shadow. 8. Computation of Moon's cusps. 9. Moon's cusps—diagram.

##### 18. Heliacal rising and setting of Planets and Stars ... 254

1. Heliacal rising and setting of planets. 2. Days of rising and setting. 3. Planetary elongation for rising and setting. 4. Visibility corrections. 5. Computation of rising and setting. 6. Jupiter's rising and setting. 7. Venus: Rising and setting. 8. Rising and setting of a star. 9. Canopus: Rising.

##### 19. Conjunction of Planets ... 264

1. Types of planetary conjunctions. 2. Conjunction: Principle of computation. 3. Computation of conjunction.

##### 20. Conjunction of Stars and Planets ... 271

1. Conjunction of stars and planets. 2. Principle of planet-star conjunction. 3. Occultation of stars by planets. 4. Occultation of Rohiṇī by planets. 5. Occultation of stars by the Moon. 6. Time of star-planet conjunction.

#### V. INNOVATIVE TRENDS

##### 21. Novel Innovations ... 274

1. True longitude computation on the sphere of the zodiac. 2. Computation of True Moon. 3. Simplified astronomical procedures.

#### IV. OCCULTATION

##### 16. Eclipses ... 196

1. Cause stated in the Ṛgveda. 2. Cause of the lunar eclipse. 3. Lunar eclipse: Principle of computation. 4. Lunar eclipse computation: Vāsiṣṭha and Pauliṣa. 5. —Saurasiddhānta. 6. —Āryabhaṭīya. 7. —Āryabhaṭa's Midnight system. 8. —Emendation by Brahmagupta. 9. —Bhāskara I. 10. —Lalla. 11. —Bhāskara II. 12. —Karaṇaratna. 13. —Śrīpati. 14. —Vākyakaraṇa. 15. —Grahalāghava. 16. Lunar eclipse diagram: Vāsiṣṭha Pauliṣa. 17. —Āryabhaṭa's Midnight system. 18. —Bhāskara I. 19. —Lalla. 20. —Sūryasiddhānta. 21. —Bhāskara II. 22. —Karaṇaratna. 23. Solar eclipse: Computation: Pauliṣa. 24. —Romakasiddhānta. 25. —Saurasiddhānta. 26. —Āryabhaṭa's Midnight system. 27. —Bhāskara I. 28. —Lalla. 29. —Mahāsiddhānta. 30. —Bhāskara II. 31. —Karaṇaratna. 32. —Śrīpati. 33. —Grahalāghava. 34. —Solar eclipse diagram: Romakasiddhānta. 35. —Saurasiddhānta. 36. Colour of eclipses. 37. Conditions for non-prediction of eclipses. 38. —Inscriptional references: Lunar eclipses. 38. Solar eclipses.

##### 17. Phases of the Moon ... 241

1. Periodical appearance of the Moon. 2. Moon's luminosity. 3. Conditions of Moon's visibility. 4. Preliminaries for computation. 5. Visibility corrections: Ākṣa, Āyana and the Third. 6. Rising and setting of the Moon. 7. Moon's shadow. 8. Computation of Moon's cusps. 9. Moon's cusps—diagram.

##### 18. Heliacal rising and setting of Planets and Stars ... 254

1. Heliacal rising and setting of planets. 2. Days of rising and setting. 3. Planetary elongation for rising and setting. 4. Visibility corrections. 5. Computation of rising and setting. 6. Jupiter's rising and setting. 7. Venus: Rising and setting. 8. Rising and setting of a star. 9. Canopus: Rising.

##### 19. Conjunction of Planets ... 264

1. Types of planetary conjunctions. 2. Conjunction: Principle of computation. 3. Computation of conjunction.

##### 20. Conjunction of Stars and Planets ... 271

1. Conjunction of stars and planets. 2. Principle of planet-star conjunction. 3. Occultation of stars by planets. 4. Occultation of Rohiṇī by planets. 5. Occultation of stars by the Moon. 6. Time of star-planet conjunction.

#### V. INNOVATIVE TRENDS

##### 21. Novel Innovations ... 274

1. True longitude computation on the sphere of the zodiac. 2. Computation of True Moon. 3. Simplified astronomical procedures.

#### IV. OCCULTATION

##### 16. Eclipses ... 196

1. Cause stated in the Ṛgveda. 2. Cause of the lunar eclipse. 3. Lunar eclipse: Principle of computation. 4. Lunar eclipse computation: Vāsiṣṭha and Pauliṣa. 5. —Saurasiddhānta. 6. —Āryabhaṭīya. 7. —Āryabhaṭa's Midnight system. 8. —Emendation by Brahmagupta. 9. —Bhāskara I. 10. —Lalla. 11. —Bhāskara II. 12. —Karaṇaratna. 13. —Śrīpati. 14. —Vākyakaraṇa. 15. —Grahalāghava. 16. Lunar eclipse diagram: Vāsiṣṭha Pauliṣa. 17. —Āryabhaṭa's Midnight system. 18. —Bhāskara I. 19. —Lalla. 20. —Sūryasiddhānta. 21. —Bhāskara II. 22. —Karaṇaratna. 23. Solar eclipse: Computation: Pauliṣa. 24. —Romakasiddhānta. 25. —Saurasiddhānta. 26. —Āryabhaṭa's Midnight system. 27. —Bhāskara I. 28. —Lalla. 29. —Mahāsiddhānta. 30. —Bhāskara II. 31. —Karaṇaratna. 32. —Śrīpati. 33. —Grahalāghava. 34. —Solar eclipse diagram: Romakasiddhānta. 35. —Saurasiddhānta. 36. Colour of eclipses. 37. Conditions for non-prediction of eclipses. 38. —Inscriptional references: Lunar eclipses. 38. Solar eclipses.

##### 17. Phases of the Moon ... 241

1. Periodical appearance of the Moon. 2. Moon's luminosity. 3. Conditions of Moon's visibility. 4. Preliminaries for computation. 5. Visibility corrections: Ākṣa, Āyana and the Third. 6. Rising and setting of the Moon. 7. Moon's shadow. 8. Computation of Moon's cusps. 9. Moon's cusps—diagram.

##### 18. Heliacal rising and setting of Planets and Stars ... 254

1. Heliacal rising and setting of planets. 2. Days of rising and setting. 3. Planetary elongation for rising and setting. 4. Visibility corrections. 5. Computation of rising and setting. 6. Jupiter's rising and setting. 7. Venus: Rising and setting. 8. Rising and setting of a star. 9. Canopus: Rising.

##### 19. Conjunction of Planets ... 264

1. Types of planetary conjunctions. 2. Conjunction: Principle of computation. 3. Computation of conjunction.

##### 20. Conjunction of Stars and Planets ... 271

1. Conjunction of stars and planets. 2. Principle of planet-star conjunction. 3. Occultation of stars by planets. 4. Occultation of Rohiṇī by planets. 5. Occultation of stars by the Moon. 6. Time of star-planet conjunction.

#### V. INNOVATIVE TRENDS

##### 21. Novel Innovations ... 274

1. True longitude computation on the sphere of the zodiac. 2. Computation of True Moon. 3. Simplified astronomical procedures.

#### IV. OCCULTATION

##### 16. Eclipses ... 196

1. Cause stated in the Ṛgveda. 2. Cause of the lunar eclipse. 3. Lunar eclipse: Principle of computation. 4. Lunar eclipse computation: Vāsiṣṭha and Pauliṣa. 5. —Saurasiddhānta. 6. —Āryabhaṭīya. 7. —Āryabhaṭa's Midnight system. 8. —Emendation by Brahmagupta. 9. —Bhāskara I. 10. —Lalla. 11. —Bhāskara II. 12. —Karaṇaratna. 13. —Śrīpati. 14. —Vākyakaraṇa. 15. —Grahalāghava. 16. Lunar eclipse diagram: Vāsiṣṭha Pauliṣa. 17. —Āryabhaṭa's Midnight system. 18. —Bhāskara I. 19. —Lalla. 20. —Sūryasiddhānta. 21. —Bhāskara II. 22. —Karaṇaratna. 23. Solar eclipse: Computation: Pauliṣa. 24. —Romakasiddhānta. 25. —Saurasiddhānta. 26. —Āryabhaṭa's Midnight system. 27. —Bhāskara I. 28. —Lalla. 29. —Mahāsiddhānta. 30. —Bhāskara II. 31. —Karaṇaratna. 32. —Śrīpati. 33. —Grahalāghava. 34. —Solar eclipse diagram: Romakasiddhānta. 35. —Saurasiddhānta. 36. Colour of eclipses. 37. Conditions for non-prediction of eclipses. 38. —Inscriptional references: Lunar eclipses. 38. Solar eclipses.

##### 17. Phases of the Moon ... 241

1. Periodical appearance of the Moon. 2. Moon's luminosity. 3. Conditions of Moon's visibility. 4. Preliminaries for computation. 5. Visibility corrections: Ākṣa, Āyana and the Third. 6. Rising and setting of the Moon. 7. Moon's shadow. 8. Computation of Moon's cusps. 9. Moon's cusps—diagram.

##### 18. Heliacal rising and setting of Planets and Stars ... 254

1. Heliacal rising and setting of planets. 2. Days of rising and setting. 3. Planetary elongation for rising and setting. 4. Visibility corrections. 5. Computation of rising and setting. 6. Jupiter's rising and setting. 7. Venus: Rising and setting. 8. Rising and setting of a star. 9. Canopus: Rising.

##### 19. Conjunction of Planets ... 264

1. Types of planetary conjunctions. 2. Conjunction: Principle of computation. 3. Computation of conjunction.

##### 20. Conjunction of Stars and Planets ... 271

1. Conjunction of stars and planets. 2. Principle of planet-star conjunction. 3. Occultation of stars by planets. 4. Occultation of Rohiṇī by planets. 5. Occultation of stars by the Moon. 6. Time of star-planet conjunction.

#### V. INNOVATIVE TRENDS

##### 21. Novel Innovations ... 274

1. True longitude computation on the sphere of the zodiac. 2. Computation of True Moon. 3. Simplified astronomical procedures.

#### IV. OCCULTATION

##### 16. Eclipses ... 196

1. Cause stated in the Ṛgveda. 2. Cause of the lunar eclipse. 3. Lunar eclipse: Principle of computation. 4. Lunar eclipse computation: Vāsiṣṭha and Pauliṣa. 5. —Saurasiddhānta. 6. —Āryabhaṭīya. 7. —Āryabhaṭa's Midnight system. 8. —Emendation by Brahmagupta. 9. —Bhāskara I. 10. —Lalla. 11. —Bhāskara II. 12. —Karaṇaratna. 13. —Śrīpati. 14. —Vākyakaraṇa. 15. —Grahalāghava. 16. Lunar eclipse diagram: Vāsiṣṭha Pauliṣa. 17. —Āryabhaṭa's Midnight system. 18. —Bhāskara I. 19. —Lalla. 20. —Sūryasiddhānta. 21. —Bhāskara II. 22. —Karaṇaratna. 23. Solar eclipse: Computation: Pauliṣa. 24. —Romakasiddhānta. 25. —Saurasiddhānta. 26. —Āryabhaṭa's Midnight system. 27. —Bhāskara I. 28. —Lalla. 29. —Mahāsiddhānta. 30. —Bhāskara II. 31. —Karaṇaratna. 32. —Śrīpati. 33. —Grahalāghava. 34. —Solar eclipse diagram: Romakasiddhānta. 35. —Saurasiddhānta. 36. Colour of eclipses. 37. Conditions for non-prediction of eclipses. 38. —Inscriptional references: Lunar eclipses. 38. Solar eclipses.

##### 17. Phases of the Moon ... 241

1. Periodical appearance of the Moon. 2. Moon's luminosity. 3. Conditions of Moon's visibility. 4. Preliminaries for computation. 5. Visibility corrections: Ākṣa, Āyana and the Third. 6. Rising and setting of the Moon. 7. Moon's shadow. 8. Computation of Moon's cusps. 9. Moon's cusps—diagram.

##### 18. Heliacal rising and setting of Planets and Stars ... 254

1. Heliacal rising and setting of planets. 2. Days of rising and setting. 3. Planetary elongation for rising and setting. 4. Visibility corrections. 5. Computation of rising and setting. 6. Jupiter's rising and setting. 7. Venus: Rising and setting. 8. Rising and setting of a star. 9. Canopus: Rising.

##### 19. Conjunction of Planets ... 264

1. Types of planetary conjunctions. 2. Conjunction: Principle of computation. 3. Computation of conjunction.

##### 20. Conjunction of Stars and Planets ... 271

1. Conjunction of stars and planets. 2. Principle of planet-star conjunction. 3. Occultation of stars by planets. 4. Occultation of Rohiṇī by planets. 5. Occultation of stars by the Moon. 6. Time of star-planet conjunction.

#### V. INNOVATIVE TRENDS

##### 21. Novel Innovations ... 274

1. True longitude computation on the sphere of the zodiac. 2. Computation of True Moon. 3. Simplified astronomical procedures.



#### IV. OCCULTATION

##### 16. Eclipses ... 196

1. Cause stated in the Ṛgveda. 2. Cause of the lunar eclipse. 3. Lunar eclipse: Principle of computation. 4. Lunar eclipse computation: Vāsiṣṭha and Pauliṣa. 5. —Saurasiddhānta. 6. —Āryabhaṭīya. 7. —Āryabhaṭa's Midnight system. 8. —Emendation by Brahmagupta. 9. —Bhāskara I. 10. —Lalla. 11. —Bhāskara II. 12. —Karaṇaratna. 13. —Śrīpati. 14. —Vākyakaraṇa. 15. —Grahalāghava. 16. Lunar eclipse diagram: Vāsiṣṭha Pauliṣa. 17. —Āryabhaṭa's Midnight system. 18. —Bhāskara I. 19. —Lalla. 20. —Sūryasiddhānta. 21. —Bhāskara II. 22. —Karaṇaratna. 23. Solar eclipse: Computation: Pauliṣa. 24. —Romakasiddhānta. 25. —Saurasiddhānta. 26. —Āryabhaṭa's Midnight system. 27. —Bhāskara I. 28. —Lalla. 29. —Mahāsiddhānta. 30. —Bhāskara II. 31. —Karaṇaratna. 32. —Śrīpati. 33. —Grahalāghava. 34. —Solar eclipse diagram: Romakasiddhānta. 35. —Saurasiddhānta. 36. Colour of eclipses. 37. Conditions for non-prediction of eclipses. 38. —Inscriptional references: Lunar eclipses. 38. Solar eclipses.

##### 17. Phases of the Moon ... 241

1. Periodical appearance of the Moon. 2. Moon's luminosity. 3. Conditions of Moon's visibility. 4. Preliminaries for computation. 5. Visibility corrections: Ākṣa, Āyana and the Third. 6. Rising and setting of the Moon. 7. Moon's shadow. 8. Computation of Moon's cusps. 9. Moon's cusps—diagram.

##### 18. Heliacal rising and setting of Planets and Stars ... 254

1. Heliacal rising and setting of planets. 2. Days of rising and setting. 3. Planetary elongation for rising and setting. 4. Visibility corrections. 5. Computation of rising and setting. 6. Jupiter's rising and setting. 7. Venus: Rising and setting. 8. Rising and setting of a star. 9. Canopus: Rising.

##### 19. Conjunction of Planets ... 264

1. Types of planetary conjunctions. 2. Conjunction: Principle of computation. 3. Computation of conjunction.

##### 20. Conjunction of Stars and Planets ... 271

1. Conjunction of stars and planets. 2. Principle of planet-star conjunction. 3. Occultation of stars by planets. 4. Occultation of Rohiṇī by planets. 5. Occultation of stars by the Moon. 6. Time of star-planet conjunction.

#### V. INNOVATIVE TRENDS

##### 21. Novel Innovations ... 274

1. True longitude computation on the sphere of the zodiac. 2. Computation of True Moon. 3. Simplified astronomical procedures.

#### IV. OCCULTATION

##### 16. Eclipses ... 196

1. Cause stated in the Ṛgveda. 2. Cause of the lunar eclipse. 3. Lunar eclipse: Principle of computation. 4. Lunar eclipse computation: Vāsiṣṭha and Pauliṣa. 5. —Saurasiddhānta. 6. —Āryabhaṭīya. 7. —Āryabhaṭa's Midnight system. 8. —Emendation by Brahmagupta. 9. —Bhāskara I. 10. —Lalla. 11. —Bhāskara II. 12. —Karaṇaratna. 13. —Śrīpati. 14. —Vākyakaraṇa. 15. —Grahalāghava. 16. Lunar eclipse diagram: Vāsiṣṭha Pauliṣa. 17. —Āryabhaṭa's Midnight system. 18. —Bhāskara I. 19. —Lalla. 20. —Sūryasiddhānta. 21. —Bhāskara II. 22. —Karaṇaratna. 23. Solar eclipse: Computation: Pauliṣa. 24. —Romakasiddhānta. 25. —Saurasiddhānta. 26. —Āryabhaṭa's Midnight system. 27. —Bhāskara I. 28. —Lalla. 29. —Mahāsiddhānta. 30. —Bhāskara II. 31. —Karaṇaratna. 32. —Śrīpati. 33. —Grahalāghava. 34. —Solar eclipse diagram: Romakasiddhānta. 35. —Saurasiddhānta. 36. Colour of eclipses. 37. Conditions for non-prediction of eclipses. 38. —Inscriptional references: Lunar eclipses. 38. Solar eclipses.

##### 17. Phases of the Moon ... 241

1. Periodical appearance of the Moon. 2. Moon's luminosity. 3. Conditions of Moon's visibility. 4. Preliminaries for computation. 5. Visibility corrections: Ākṣa, Āyana and the Third. 6. Rising and setting of the Moon. 7. Moon's shadow. 8. Computation of Moon's cusps. 9. Moon's cusps—diagram.

##### 18. Heliacal rising and setting of Planets and Stars ... 254

1. Heliacal rising and setting of planets. 2. Days of rising and setting. 3. Planetary elongation for rising and setting. 4. Visibility corrections. 5. Computation of rising and setting. 6. Jupiter's rising and setting. 7. Venus: Rising and setting. 8. Rising and setting of a star. 9. Canopus: Rising.

##### 19. Conjunction of Planets ... 264

1. Types of planetary conjunctions. 2. Conjunction: Principle of computation. 3. Computation of conjunction.

##### 20. Conjunction of Stars and Planets ... 271

1. Conjunction of stars and planets. 2. Principle of planet-star conjunction. 3. Occultation of stars by planets. 4. Occultation of Rohiṇī by planets. 5. Occultation of stars by the Moon. 6. Time of star-planet conjunction.

#### V. INNOVATIVE TRENDS

##### 21. Novel Innovations ... 274

1. True longitude computation on the sphere of the zodiac. 2. Computation of True Moon. 3. Simplified astronomical procedures.

#### IV. OCCULTATION

##### 16. Eclipses ... 196

1. Cause stated in the Ṛgveda. 2. Cause of the lunar eclipse. 3. Lunar eclipse: Principle of computation. 4. Lunar eclipse computation: Vāsiṣṭha and Pauliṣa. 5. —Saurasiddhānta. 6. —Āryabhaṭīya. 7. —Āryabhaṭa's Midnight system. 8. —Emendation by Brahmagupta. 9. —Bhāskara I. 10. —Lalla. 11. —Bhāskara II. 12. —Karaṇaratna. 13. —Śrīpati. 14. —Vākyakaraṇa. 15. —Grahalāghava. 16. Lunar eclipse diagram: Vāsiṣṭha Pauliṣa. 17. —Āryabhaṭa's Midnight system. 18. —Bhāskara I. 19. —Lalla. 20. —Sūryasiddhānta. 21. —Bhāskara II. 22. —Karaṇaratna. 23. Solar eclipse: Computation: Pauliṣa. 24. —Romakasiddhānta. 25. —Saurasiddhānta. 26. —Āryabhaṭa's Midnight system. 27. —Bhāskara I. 28. —Lalla. 29. —Mahāsiddhānta. 30. —Bhāskara II. 31. —Karaṇaratna. 32. —Śrīpati. 33. —Grahalāghava. 34. —Solar eclipse diagram: Romakasiddhānta. 35. —Saurasiddhānta. 36. Colour of eclipses. 37. Conditions for non-prediction of eclipses. 38. —Inscriptional references: Lunar eclipses. 38. Solar eclipses.

##### 17. Phases of the Moon ... 241

1. Periodical appearance of the Moon. 2. Moon's luminosity. 3. Conditions of Moon's visibility. 4. Preliminaries for computation. 5. Visibility corrections: Ākṣa, Āyana and the Third. 6. Rising and setting of the Moon. 7. Moon's shadow. 8. Computation of Moon's cusps. 9. Moon's cusps—diagram.

##### 18. Heliacal rising and setting of Planets and Stars ... 254

1. Heliacal rising and setting of planets. 2. Days of rising and setting. 3. Planetary elongation for rising and setting. 4. Visibility corrections. 5. Computation of rising and setting. 6. Jupiter's rising and setting. 7. Venus: Rising and setting. 8. Rising and setting of a star. 9. Canopus: Rising.

##### 19. Conjunction of Planets ... 264

1. Types of planetary conjunctions. 2. Conjunction: Principle of computation. 3. Computation of conjunction.

##### 20. Conjunction of Stars and Planets ... 271

1. Conjunction of stars and planets. 2. Principle of planet-star conjunction. 3. Occultation of stars by planets. 4. Occultation of Rohiṇī by planets. 5. Occultation of stars by the Moon. 6. Time of star-planet conjunction.

#### V. INNOVATIVE TRENDS

##### 21. Novel Innovations ... 274

1. True longitude computation on the sphere of the zodiac. 2. Computation of True Moon. 3. Simplified astronomical procedures.

#### IV. OCCULTATION

##### 16. Eclipses ... 196

1. Cause stated in the Ṛgveda. 2. Cause of the lunar eclipse. 3. Lunar eclipse: Principle of computation. 4. Lunar eclipse computation: Vāsiṣṭha and Pauliṣa. 5. —Saurasiddhānta. 6. —Āryabhaṭīya. 7. —Āryabhaṭa's Midnight system. 8. —Emendation by Brahmagupta. 9. —Bhāskara I. 10. —Lalla. 11. —Bhāskara II. 12. —Karaṇaratna. 13. —Śrīpati. 14. —Vākyakaraṇa. 15. —Grahalāghava. 16. Lunar eclipse diagram: Vāsiṣṭha Pauliṣa. 17. —Āryabhaṭa's Midnight system. 18. —Bhāskara I. 19. —Lalla. 20. —Sūryasiddhānta. 21. —Bhāskara II. 22. —Karaṇaratna. 23. Solar eclipse: Computation: Pauliṣa. 24. —Romakasiddhānta. 25. —Saurasiddhānta. 26. —Āryabhaṭa's Midnight system. 27. —Bhāskara I. 28. —Lalla. 29. —Mahāsiddhānta. 30. —Bhāskara II. 31. —Karaṇaratna. 32. —Śrīpati. 33. —Grahalāghava. 34. —Solar eclipse diagram: Romakasiddhānta. 35. —Saurasiddhānta. 36. Colour of eclipses. 37. Conditions for non-prediction of eclipses. 38. —Inscriptional references: Lunar eclipses. 38. Solar eclipses.

##### 17. Phases of the Moon ... 241

1. Periodical appearance of the Moon. 2. Moon's luminosity. 3. Conditions of Moon's visibility. 4. Preliminaries for computation. 5. Visibility corrections: Ākṣa, Āyana and the Third. 6. Rising and setting of the Moon. 7. Moon's shadow. 8. Computation of Moon's cusps. 9. Moon's cusps—diagram.

##### 18. Heliacal rising and setting of Planets and Stars ... 254

1. Heliacal rising and setting of planets. 2. Days of rising and setting. 3. Planetary elongation for rising and setting. 4. Visibility corrections. 5. Computation of rising and setting. 6. Jupiter's rising and setting. 7. Venus: Rising and setting. 8. Rising and setting of a star. 9. Canopus: Rising.

##### 19. Conjunction of Planets ... 264

1. Types of planetary conjunctions. 2. Conjunction: Principle of computation. 3. Computation of conjunction.

##### 20. Conjunction of Stars and Planets ... 271

1. Conjunction of stars and planets. 2. Principle of planet-star conjunction. 3. Occultation of stars by planets. 4. Occultation of Rohiṇī by planets. 5. Occultation of stars by the Moon. 6. Time of star-planet conjunction.

#### V. INNOVATIVE TRENDS

##### 21. Novel Innovations ... 274

1. True longitude computation on the sphere of the zodiac. 2. Computation of True Moon. 3. Simplified astronomical procedures.

#### IV. OCCULTATION

##### 16. Eclipses ... 196

1. Cause stated in the Ṛgveda. 2. Cause of the lunar eclipse. 3. Lunar eclipse: Principle of computation. 4. Lunar eclipse computation: Vāsiṣṭha and Pauliṣa. 5. —Saurasiddhānta. 6. —Āryabhaṭīya. 7. —Āryabhaṭa's Midnight system. 8. —Emendation by Brahmagupta. 9. —Bhāskara I. 10. —Lalla. 11. —Bhāskara II. 12. —Karaṇaratna. 13. —Śrīpati. 14. —Vākyakaraṇa. 15. —Grahalāghava. 16. Lunar eclipse diagram: Vāsiṣṭha Pauliṣa. 17. —Āryabhaṭa's Midnight system. 18. —Bhāskara I. 19. —Lalla. 20. —Sūryasiddhānta. 21. —Bhāskara II. 22. —Karaṇaratna. 23. Solar eclipse: Computation: Pauliṣa. 24. —Romakasiddhānta. 25. —Saurasiddhānta. 26. —Āryabhaṭa's Midnight system. 27. —Bhāskara I. 28. —Lalla. 29. —Mahāśiddhānta. 30. —Bhāskara II. 31. —Karaṇaratna. 32. —Śrīpati. 33. —Grahalāghava. 34. —Solar eclipse diagram: Romakasiddhānta. 35. —Saurasiddhānta. 36. Colour of eclipses. 37. Conditions for non-prediction of eclipses. 38. —Inscriptional references: Lunar eclipses. 38. Solar eclipses.

##### 17. Phases of the Moon ... 241

1. Periodical appearance of the Moon. 2. Moon's luminosity. 3. Conditions of Moon's visibility. 4. Preliminaries for computation. 5. Visibility corrections: Ākṣa, Āyana and the Third. 6. Rising and setting of the Moon. 7. Moon's shadow. 8. Computation of Moon's cusps. 9. Moon's cusps—diagram.

##### 18. Heliacal rising and setting of Planets and Stars ... 254

1. Heliacal rising and setting of planets. 2. Days of rising and setting. 3. Planetary elongation for rising and setting. 4. Visibility corrections. 5. Computation of rising and setting. 6. Jupiter's rising and setting. 7. Venus: Rising and setting. 8. Rising and setting of a star. 9. Canopus: Rising.

##### 19. Conjunction of Planets ... 264

1. Types of planetary conjunctions. 2. Conjunction: Principle of computation. 3. Computation of conjunction.

##### 20. Conjunction of Stars and Planets ... 271

1. Conjunction of stars and planets. 2. Principle of planet-star conjunction. 3. Occultation of stars by planets. 4. Occultation of Rohiṇī by planets. 5. Occultation of stars by the Moon. 6. Time of star-planet conjunction.

#### V. INNOVATIVE TRENDS

##### 21. Novel Innovations ... 274

1. True longitude computation on the sphere of the zodiac. 2. Computation of True Moon. 3. Simplified astronomical procedures.

#### IV. OCCULTATION

##### 16. Eclipses ... 196

1. Cause stated in the Ṛgveda. 2. Cause of the lunar eclipse. 3. Lunar eclipse: Principle of computation. 4. Lunar eclipse computation: Vāsiṣṭha and Pauliṣa. 5. —Saurasiddhānta. 6. —Āryabhaṭīya. 7. —Āryabhaṭa's Midnight system. 8. —Emendation by Brahmagupta. 9. —Bhāskara I. 10. —Lalla. 11. —Bhāskara II. 12. —Karaṇaratna. 13. —Śrīpati. 14. —Vākyakaraṇa. 15. —Grahalāghava. 16. Lunar eclipse diagram: Vāsiṣṭha Pauliṣa. 17. —Āryabhaṭa's Midnight system. 18. —Bhāskara I. 19. —Lalla. 20. —Sūryasiddhānta. 21. —Bhāskara II. 22. —Karaṇaratna. 23. Solar eclipse: Computation: Pauliṣa. 24. —Romakasiddhānta. 25. —Saurasiddhānta. 26. —Āryabhaṭa's Midnight system. 27. —Bhāskara I. 28. —Lalla. 29. —Mahāśiddhānta. 30. —Bhāskara II. 31. —Karaṇaratna. 32. —Śrīpati. 33. —Grahalāghava. 34. —Solar eclipse diagram: Romakasiddhānta. 35. —Saurasiddhānta. 36. Colour of eclipses. 37. Conditions for non-prediction of eclipses. 38. —Inscriptional references: Lunar eclipses. 38. Solar eclipses.

##### 17. Phases of the Moon ... 241

1. Periodical appearance of the Moon. 2. Moon's luminosity. 3. Conditions of Moon's visibility. 4. Preliminaries for computation. 5. Visibility corrections: Ākṣa, Āyana and the Third. 6. Rising and setting of the Moon. 7. Moon's shadow. 8. Computation of Moon's cusps. 9. Moon's cusps—diagram.

##### 18. Heliacal rising and setting of Planets and Stars ... 254

1. Heliacal rising and setting of planets. 2. Days of rising and setting. 3. Planetary elongation for rising and setting. 4. Visibility corrections. 5. Computation of rising and setting. 6. Jupiter's rising and setting. 7. Venus: Rising and setting. 8. Rising and setting of a star. 9. Canopus: Rising.

##### 19. Conjunction of Planets ... 264

1. Types of planetary conjunctions. 2. Conjunction: Principle of computation. 3. Computation of conjunction.

##### 20. Conjunction of Stars and Planets ... 271

1. Conjunction of stars and planets. 2. Principle of planet-star conjunction. 3. Occultation of stars by planets. 4. Occultation of Rohiṇī by planets. 5. Occultation of stars by the Moon. 6. Time of star-planet conjunction.

#### V. INNOVATIVE TRENDS

##### 21. Novel Innovations ... 274

1. True longitude computation on the sphere of the zodiac. 2. Computation of True Moon. 3. Simplified astronomical procedures.

#### IV. OCCULTATION

##### 16. Eclipses ... 196

1. Cause stated in the Ṛgveda. 2. Cause of the lunar eclipse. 3. Lunar eclipse: Principle of computation. 4. Lunar eclipse computation: Vāsiṣṭha and Pauliṣa. 5. —Saurasiddhānta. 6. —Āryabhaṭīya. 7. —Āryabhaṭa's Midnight system. 8. —Emendation by Brahmagupta. 9. —Bhāskara I. 10. —Lalla. 11. —Bhāskara II. 12. —Karaṇaratna. 13. —Śrīpati. 14. —Vākyakaraṇa. 15. —Grahalāghava. 16. Lunar eclipse diagram: Vāsiṣṭha Pauliṣa. 17. —Āryabhaṭa's Midnight system. 18. —Bhāskara I. 19. —Lalla. 20. —Sūryasiddhānta. 21. —Bhāskara II. 22. —Karaṇaratna. 23. Solar eclipse: Computation: Pauliṣa. 24. —Romakasiddhānta. 25. —Saurasiddhānta. 26. —Āryabhaṭa's Midnight system. 27. —Bhāskara I. 28. —Lalla. 29. —Mahāsiddhānta. 30. —Bhāskara II. 31. —Karaṇaratna. 32. —Śrīpati. 33. —Grahalāghava. 34. —Solar eclipse diagram: Romakasiddhānta. 35. —Saurasiddhānta. 36. Colour of eclipses. 37. Conditions for non-prediction of eclipses. 38. —Inscriptional references: Lunar eclipses. 38. Solar eclipses.

##### 17. Phases of the Moon ... 241

1. Periodical appearance of the Moon. 2. Moon's luminosity. 3. Conditions of Moon's visibility. 4. Preliminaries for computation. 5. Visibility corrections: Ākṣa, Āyana and the Third. 6. Rising and setting of the Moon. 7. Moon's shadow. 8. Computation of Moon's cusps. 9. Moon's cusps—diagram.

##### 18. Heliacal rising and setting of Planets and Stars ... 254

1. Heliacal rising and setting of planets. 2. Days of rising and setting. 3. Planetary elongation for rising and setting. 4. Visibility corrections. 5. Computation of rising and setting. 6. Jupiter's rising and setting. 7. Venus: Rising and setting. 8. Rising and setting of a star. 9. Canopus: Rising.

##### 19. Conjunction of Planets ... 264

1. Types of planetary conjunctions. 2. Conjunction: Principle of computation. 3. Computation of conjunction.

##### 20. Conjunction of Stars and Planets ... 271

1. Conjunction of stars and planets. 2. Principle of planet-star conjunction. 3. Occultation of stars by planets. 4. Occultation of Rohiṇī by planets. 5. Occultation of stars by the Moon. 6. Time of star-planet conjunction.

#### V. INNOVATIVE TRENDS

##### 21. Novel Innovations ... 274

1. True longitude computation on the sphere of the zodiac. 2. Computation of True Moon. 3. Simplified astronomical procedures.

#### IV. OCCULTATION

##### 16. Eclipses ... 196

1. Cause stated in the Ṛgveda. 2. Cause of the lunar eclipse. 3. Lunar eclipse: Principle of computation. 4. Lunar eclipse computation: Vāsiṣṭha and Pauliṣa. 5. —Saurasiddhānta. 6. —Āryabhaṭīya. 7. —Āryabhaṭa's Midnight system. 8. —Emendation by Brahmagupta. 9. —Bhāskara I. 10. —Lalla. 11. —Bhāskara II. 12. —Karaṇaratna. 13. —Śrīpati. 14. —Vākyakaraṇa. 15. —Grahalāghava. 16. Lunar eclipse diagram: Vāsiṣṭha Pauliṣa. 17. —Āryabhaṭa's Midnight system. 18. —Bhāskara I. 19. —Lalla. 20. —Sūryasiddhānta. 21. —Bhāskara II. 22. —Karaṇaratna. 23. Solar eclipse: Computation: Pauliṣa. 24. —Romakasiddhānta. 25. —Saurasiddhānta. 26. —Āryabhaṭa's Midnight system. 27. —Bhāskara I. 28. —Lalla. 29. —Mahāsiddhānta. 30. —Bhāskara II. 31. —Karaṇaratna. 32. —Śrīpati. 33. —Grahalāghava. 34. —Solar eclipse diagram: Romakasiddhānta. 35. —Saurasiddhānta. 36. Colour of eclipses. 37. Conditions for non-prediction of eclipses. 38. —Inscriptional references: Lunar eclipses. 38. Solar eclipses.

##### 17. Phases of the Moon ... 241

1. Periodical appearance of the Moon. 2. Moon's luminosity. 3. Conditions of Moon's visibility. 4. Preliminaries for computation. 5. Visibility corrections: Ākṣa, Āyana and the Third. 6. Rising and setting of the Moon. 7. Moon's shadow. 8. Computation of Moon's cusps. 9. Moon's cusps—diagram.

##### 18. Heliacal rising and setting of Planets and Stars ... 254

1. Heliacal rising and setting of planets. 2. Days of rising and setting. 3. Planetary elongation for rising and setting. 4. Visibility corrections. 5. Computation of rising and setting. 6. Jupiter's rising and setting. 7. Venus: Rising and setting. 8. Rising and setting of a star. 9. Canopus: Rising.

##### 19. Conjunction of Planets ... 264

1. Types of planetary conjunctions. 2. Conjunction: Principle of computation. 3. Computation of conjunction.

##### 20. Conjunction of Stars and Planets ... 271

1. Conjunction of stars and planets. 2. Principle of planet-star conjunction. 3. Occultation of stars by planets. 4. Occultation of Rohiṇī by planets. 5. Occultation of stars by the Moon. 6. Time of star-planet conjunction.

#### V. INNOVATIVE TRENDS

##### 21. Novel Innovations ... 274

1. True longitude computation on the sphere of the zodiac. 2. Computation of True Moon. 3. Simplified astronomical procedures.



#### IV. OCCULTATION

##### 16. Eclipses ... 196

1. Cause stated in the Ṛgveda. 2. Cause of the lunar eclipse. 3. Lunar eclipse: Principle of computation. 4. Lunar eclipse computation: Vāsiṣṭha and Pauliṣa. 5. —Saurasiddhānta. 6. —Āryabhaṭīya. 7. —Āryabhaṭa's Midnight system. 8. —Emendation by Brahmagupta. 9. —Bhāskara I. 10. —Lalla. 11. —Bhāskara II. 12. —Karaṇaratna. 13. —Śrīpati. 14. —Vākyakaraṇa. 15. —Grahalāghava. 16. Lunar eclipse diagram: Vāsiṣṭha Pauliṣa. 17. —Āryabhaṭa's Midnight system. 18. —Bhāskara I. 19. —Lalla. 20. —Sūryasiddhānta. 21. —Bhāskara II. 22. —Karaṇaratna. 23. Solar eclipse: Computation: Pauliṣa. 24. —Romakasiddhānta. 25. —Saurasiddhānta. 26. —Āryabhaṭa's Midnight system. 27. —Bhāskara I. 28. —Lalla. 29. —Mahāsiddhānta. 30. —Bhāskara II. 31. —Karaṇaratna. 32. —Śrīpati. 33. —Grahalāghava. 34. —Solar eclipse diagram: Romakasiddhānta. 35. —Saurasiddhānta. 36. Colour of eclipses. 37. Conditions for non-prediction of eclipses. 38. —Inscriptional references: Lunar eclipses. 38. Solar eclipses.

##### 17. Phases of the Moon ... 241

1. Periodical appearance of the Moon. 2. Moon's luminosity. 3. Conditions of Moon's visibility. 4. Preliminaries for computation. 5. Visibility corrections: Ākṣa, Āyana and the Third. 6. Rising and setting of the Moon. 7. Moon's shadow. 8. Computation of Moon's cusps. 9. Moon's cusps—diagram.

##### 18. Heliacal rising and setting of Planets and Stars ... 254

1. Heliacal rising and setting of planets. 2. Days of rising and setting. 3. Planetary elongation for rising and setting. 4. Visibility corrections. 5. Computation of rising and setting. 6. Jupiter's rising and setting. 7. Venus: Rising and setting. 8. Rising and setting of a star. 9. Canopus: Rising.

##### 19. Conjunction of Planets ... 264

1. Types of planetary conjunctions. 2. Conjunction: Principle of computation. 3. Computation of conjunction.

##### 20. Conjunction of Stars and Planets ... 271

1. Conjunction of stars and planets. 2. Principle of planet-star conjunction. 3. Occultation of stars by planets. 4. Occultation of Rohiṇī by planets. 5. Occultation of stars by the Moon. 6. Time of star-planet conjunction.

#### V. INNOVATIVE TRENDS

##### 21. Novel Innovations ... 274

1. True longitude computation on the sphere of the zodiac. 2. Computation of True Moon. 3. Simplified astronomical procedures.

#### IV. OCCULTATION

##### 16. Eclipses ... 196

1. Cause stated in the Ṛgveda. 2. Cause of the lunar eclipse. 3. Lunar eclipse: Principle of computation. 4. Lunar eclipse computation: Vāsiṣṭha and Pauliṣa. 5. —Saurasiddhānta. 6. —Āryabhaṭīya. 7. —Āryabhaṭa's Midnight system. 8. —Emendation by Brahmagupta. 9. —Bhāskara I. 10. —Lalla. 11. —Bhāskara II. 12. —Karaṇaratna. 13. —Śrīpati. 14. —Vākyakaraṇa. 15. —Grahalāghava. 16. Lunar eclipse diagram: Vāsiṣṭha Pauliṣa. 17. —Āryabhaṭa's Midnight system. 18. —Bhāskara I. 19. —Lalla. 20. —Sūryasiddhānta. 21. —Bhāskara II. 22. —Karaṇaratna. 23. Solar eclipse: Computation: Pauliṣa. 24. —Romakasiddhānta. 25. —Saurasiddhānta. 26. —Āryabhaṭa's Midnight system. 27. —Bhāskara I. 28. —Lalla. 29. —Mahāsiddhānta. 30. —Bhāskara II. 31. —Karaṇaratna. 32. —Śrīpati. 33. —Grahalāghava. 34. —Solar eclipse diagram: Romakasiddhānta. 35. —Saurasiddhānta. 36. Colour of eclipses. 37. Conditions for non-prediction of eclipses. 38. —Inscriptional references: Lunar eclipses. 38. Solar eclipses.

##### 17. Phases of the Moon ... 241

1. Periodical appearance of the Moon. 2. Moon's luminosity. 3. Conditions of Moon's visibility. 4. Preliminaries for computation. 5. Visibility corrections: Ākṣa, Āyana and the Third. 6. Rising and setting of the Moon. 7. Moon's shadow. 8. Computation of Moon's cusps. 9. Moon's cusps—diagram.

##### 18. Heliacal rising and setting of Planets and Stars ... 254

1. Heliacal rising and setting of planets. 2. Days of rising and setting. 3. Planetary elongation for rising and setting. 4. Visibility corrections. 5. Computation of rising and setting. 6. Jupiter's rising and setting. 7. Venus: Rising and setting. 8. Rising and setting of a star. 9. Canopus: Rising.

##### 19. Conjunction of Planets ... 264

1. Types of planetary conjunctions. 2. Conjunction: Principle of computation. 3. Computation of conjunction.

##### 20. Conjunction of Stars and Planets ... 271

1. Conjunction of stars and planets. 2. Principle of planet-star conjunction. 3. Occultation of stars by planets. 4. Occultation of Rohiṇī by planets. 5. Occultation of stars by the Moon. 6. Time of star-planet conjunction.

#### V. INNOVATIVE TRENDS

##### 21. Novel Innovations ... 274

1. True longitude computation on the sphere of the zodiac. 2. Computation of True Moon. 3. Simplified astronomical procedures.

#### IV. OCCULTATION

##### 16. Eclipses ... 196

1. Cause stated in the Ṛgveda. 2. Cause of the lunar eclipse. 3. Lunar eclipse: Principle of computation. 4. Lunar eclipse computation: Vāsiṣṭha and Pauliṣa. 5. —Saurasiddhānta. 6. —Āryabhaṭīya. 7. —Āryabhaṭa's Midnight system. 8. —Emendation by Brahmagupta. 9. —Bhāskara I. 10. —Lalla. 11. —Bhāskara II. 12. —Karaṇaratna. 13. —Śrīpati. 14. —Vākyakaraṇa. 15. —Grahalāghava. 16. Lunar eclipse diagram: Vāsiṣṭha Pauliṣa. 17. —Āryabhaṭa's Midnight system. 18. —Bhāskara I. 19. —Lalla. 20. —Sūryasiddhānta. 21. —Bhāskara II. 22. —Karaṇaratna. 23. Solar eclipse: Computation: Pauliṣa. 24. —Romakasiddhānta. 25. —Saurasiddhānta. 26. —Āryabhaṭa's Midnight system. 27. —Bhāskara I. 28. —Lalla. 29. —Mahāsiddhānta. 30. —Bhāskara II. 31. —Karaṇaratna. 32. —Śrīpati. 33. —Grahalāghava. 34. —Solar eclipse diagram: Romakasiddhānta. 35. —Saurasiddhānta. 36. Colour of eclipses. 37. Conditions for non-prediction of eclipses. 38. —Inscriptional references: Lunar eclipses. 38. Solar eclipses.

##### 17. Phases of the Moon ... 241

1. Periodical appearance of the Moon. 2. Moon's luminosity. 3. Conditions of Moon's visibility. 4. Preliminaries for computation. 5. Visibility corrections: Ākṣa, Āyana and the Third. 6. Rising and setting of the Moon. 7. Moon's shadow. 8. Computation of Moon's cusps. 9. Moon's cusps—diagram.

##### 18. Heliacal rising and setting of Planets and Stars ... 254

1. Heliacal rising and setting of planets. 2. Days of rising and setting. 3. Planetary elongation for rising and setting. 4. Visibility corrections. 5. Computation of rising and setting. 6. Jupiter's rising and setting. 7. Venus: Rising and setting. 8. Rising and setting of a star. 9. Canopus: Rising.

##### 19. Conjunction of Planets ... 264

1. Types of planetary conjunctions. 2. Conjunction: Principle of computation. 3. Computation of conjunction.

##### 20. Conjunction of Stars and Planets ... 271

1. Conjunction of stars and planets. 2. Principle of planet-star conjunction. 3. Occultation of stars by planets. 4. Occultation of Rohiṇī by planets. 5. Occultation of stars by the Moon. 6. Time of star-planet conjunction.

#### V. INNOVATIVE TRENDS

##### 21. Novel Innovations ... 274

1. True longitude computation on the sphere of the zodiac. 2. Computation of True Moon. 3. Simplified astronomical procedures.

#### IV. OCCULTATION

##### 16. Eclipses ... 196

1. Cause stated in the Ṛgveda. 2. Cause of the lunar eclipse. 3. Lunar eclipse: Principle of computation. 4. Lunar eclipse computation: Vāsiṣṭha and Pauliṣa. 5. —Saurasiddhānta. 6. —Āryabhaṭīya. 7. —Āryabhaṭa's Midnight system. 8. —Emendation by Brahmagupta. 9. —Bhāskara I. 10. —Lalla. 11. —Bhāskara II. 12. —Karaṇaratna. 13. —Śrīpati. 14. —Vākyakaraṇa. 15. —Grahalāghava. 16. Lunar eclipse diagram: Vāsiṣṭha Pauliṣa. 17. —Āryabhaṭa's Midnight system. 18. —Bhāskara I. 19. —Lalla. 20. —Sūryasiddhānta. 21. —Bhāskara II. 22. —Karaṇaratna. 23. Solar eclipse: Computation: Pauliṣa. 24. —Romakasiddhānta. 25. —Saurasiddhānta. 26. —Āryabhaṭa's Midnight system. 27. —Bhāskara I. 28. —Lalla. 29. —Mahāsiddhānta. 30. —Bhāskara II. 31. —Karaṇaratna. 32. —Śrīpati. 33. —Grahalāghava. 34. —Solar eclipse diagram: Romakasiddhānta. 35. —Saurasiddhānta. 36. Colour of eclipses. 37. Conditions for non-prediction of eclipses. 38. —Inscriptional references: Lunar eclipses. 38. Solar eclipses.

##### 17. Phases of the Moon ... 241

1. Periodical appearance of the Moon. 2. Moon's luminosity. 3. Conditions of Moon's visibility. 4. Preliminaries for computation. 5. Visibility corrections: Ākṣa, Āyana and the Third. 6. Rising and setting of the Moon. 7. Moon's shadow. 8. Computation of Moon's cusps. 9. Moon's cusps—diagram.

##### 18. Heliacal rising and setting of Planets and Stars ... 254

1. Heliacal rising and setting of planets. 2. Days of rising and setting. 3. Planetary elongation for rising and setting. 4. Visibility corrections. 5. Computation of rising and setting. 6. Jupiter's rising and setting. 7. Venus: Rising and setting. 8. Rising and setting of a star. 9. Canopus: Rising.

##### 19. Conjunction of Planets ... 264

1. Types of planetary conjunctions. 2. Conjunction: Principle of computation. 3. Computation of conjunction.

##### 20. Conjunction of Stars and Planets ... 271

1. Conjunction of stars and planets. 2. Principle of planet-star conjunction. 3. Occultation of stars by planets. 4. Occultation of Rohiṇī by planets. 5. Occultation of stars by the Moon. 6. Time of star-planet conjunction.

#### V. INNOVATIVE TRENDS

##### 21. Novel Innovations ... 274

1. True longitude computation on the sphere of the zodiac. 2. Computation of True Moon. 3. Simplified astronomical procedures.

#### IV. OCCULTATION

##### 16. Eclipses ... 196

1. Cause stated in the Ṛgveda. 2. Cause of the lunar eclipse. 3. Lunar eclipse: Principle of computation. 4. Lunar eclipse computation: Vāsiṣṭha and Pauliṣa. 5. —Saurasiddhānta. 6. —Āryabhaṭīya. 7. —Āryabhaṭa's Midnight system. 8. —Emendation by Brahmagupta. 9. —Bhāskara I. 10. —Lalla. 11. —Bhāskara II. 12. —Karaṇaratna. 13. —Śrīpati. 14. —Vākyakaraṇa. 15. —Grahalāghava. 16. Lunar eclipse diagram: Vāsiṣṭha Pauliṣa. 17. —Āryabhaṭa's Midnight system. 18. —Bhāskara I. 19. —Lalla. 20. —Sūryasiddhānta. 21. —Bhāskara II. 22. —Karaṇaratna. 23. Solar eclipse: Computation: Pauliṣa. 24. —Romakasiddhānta. 25. —Saurasiddhānta. 26. —Āryabhaṭa's Midnight system. 27. —Bhāskara I. 28. —Lalla. 29. —Mahāsiddhānta. 30. —Bhāskara II. 31. —Karaṇaratna. 32. —Śrīpati. 33. —Grahalāghava. 34. —Solar eclipse diagram: Romakasiddhānta. 35. —Saurasiddhānta. 36. Colour of eclipses. 37. Conditions for non-prediction of eclipses. 38. —Inscriptional references: Lunar eclipses. 38. Solar eclipses.

##### 17. Phases of the Moon ... 241

1. Periodical appearance of the Moon. 2. Moon's luminosity. 3. Conditions of Moon's visibility. 4. Preliminaries for computation. 5. Visibility corrections: Ākṣa, Āyana and the Third. 6. Rising and setting of the Moon. 7. Moon's shadow. 8. Computation of Moon's cusps. 9. Moon's cusps—diagram.

##### 18. Heliacal rising and setting of Planets and Stars ... 254

1. Heliacal rising and setting of planets. 2. Days of rising and setting. 3. Planetary elongation for rising and setting. 4. Visibility corrections. 5. Computation of rising and setting. 6. Jupiter's rising and setting. 7. Venus: Rising and setting. 8. Rising and setting of a star. 9. Canopus: Rising.

##### 19. Conjunction of Planets ... 264

1. Types of planetary conjunctions. 2. Conjunction: Principle of computation. 3. Computation of conjunction.

##### 20. Conjunction of Stars and Planets ... 271

1. Conjunction of stars and planets. 2. Principle of planet-star conjunction. 3. Occultation of stars by planets. 4. Occultation of Rohiṇī by planets. 5. Occultation of stars by the Moon. 6. Time of star-planet conjunction.

#### V. INNOVATIVE TRENDS

##### 21. Novel Innovations ... 274

1. True longitude computation on the sphere of the zodiac. 2. Computation of True Moon. 3. Simplified astronomical procedures.

#### IV. OCCULTATION

##### 16. Eclipses ... 196

1. Cause stated in the Ṛgveda. 2. Cause of the lunar eclipse. 3. Lunar eclipse: Principle of computation. 4. Lunar eclipse computation: Vāsiṣṭha and Pauliṣa. 5. —Saurasiddhānta. 6. —Āryabhaṭīya. 7. —Āryabhaṭa's Midnight system. 8. —Emendation by Brahmagupta. 9. —Bhāskara I. 10. —Lalla. 11. —Bhāskara II. 12. —Karaṇaratna. 13. —Śrīpati. 14. —Vākyakaraṇa. 15. —Grahalāghava. 16. Lunar eclipse diagram: Vāsiṣṭha Pauliṣa. 17. —Āryabhaṭa's Midnight system. 18. —Bhāskara I. 19. —Lalla. 20. —Sūryasiddhānta. 21. —Bhāskara II. 22. —Karaṇaratna. 23. Solar eclipse: Computation: Pauliṣa. 24. —Romakasiddhānta. 25. —Saurasiddhānta. 26. —Āryabhaṭa's Midnight system. 27. —Bhāskara I. 28. —Lalla. 29. —Mahāsiddhānta. 30. —Bhāskara II. 31. —Karaṇaratna. 32. —Śrīpati. 33. —Grahalāghava. 34. —Solar eclipse diagram: Romakasiddhānta. 35. —Saurasiddhānta. 36. Colour of eclipses. 37. Conditions for non-prediction of eclipses. 38. —Inscriptional references: Lunar eclipses. 38. Solar eclipses.

##### 17. Phases of the Moon ... 241

1. Periodical appearance of the Moon. 2. Moon's luminosity. 3. Conditions of Moon's visibility. 4. Preliminaries for computation. 5. Visibility corrections: Ākṣa, Āyana and the Third. 6. Rising and setting of the Moon. 7. Moon's shadow. 8. Computation of Moon's cusps. 9. Moon's cusps—diagram.

##### 18. Heliacal rising and setting of Planets and Stars ... 254

1. Heliacal rising and setting of planets. 2. Days of rising and setting. 3. Planetary elongation for rising and setting. 4. Visibility corrections. 5. Computation of rising and setting. 6. Jupiter's rising and setting. 7. Venus: Rising and setting. 8. Rising and setting of a star. 9. Canopus: Rising.

##### 19. Conjunction of Planets ... 264

1. Types of planetary conjunctions. 2. Conjunction: Principle of computation. 3. Computation of conjunction.

##### 20. Conjunction of Stars and Planets ... 271

1. Conjunction of stars and planets. 2. Principle of planet-star conjunction. 3. Occultation of stars by planets. 4. Occultation of Rohiṇī by planets. 5. Occultation of stars by the Moon. 6. Time of star-planet conjunction.

#### V. INNOVATIVE TRENDS

##### 21. Novel Innovations ... 274

1. True longitude computation on the sphere of the zodiac. 2. Computation of True Moon. 3. Simplified astronomical procedures.

#### IV. OCCULTATION

##### 16. Eclipses ... 196

1. Cause stated in the Ṛgveda. 2. Cause of the lunar eclipse. 3. Lunar eclipse: Principle of computation. 4. Lunar eclipse computation: Vāsiṣṭha and Pauliṣa. 5. —Saurasiddhānta. 6. —Āryabhaṭīya. 7. —Āryabhaṭa's Midnight system. 8. —Emendation by Brahmagupta. 9. —Bhāskara I. 10. —Lalla. 11. —Bhāskara II. 12. —Karaṇaratna. 13. —Śrīpati. 14. —Vākyakaraṇa. 15. —Grahalāghava. 16. Lunar eclipse diagram: Vāsiṣṭha Pauliṣa. 17. —Āryabhaṭa's Midnight system. 18. —Bhāskara I. 19. —Lalla. 20. —Sūryasiddhānta. 21. —Bhāskara II. 22. —Karaṇaratna. 23. Solar eclipse: Computation: Pauliṣa. 24. —Romakasiddhānta. 25. —Saurasiddhānta. 26. —Āryabhaṭa's Midnight system. 27. —Bhāskara I. 28. —Lalla. 29. —Mahāsiddhānta. 30. —Bhāskara II. 31. —Karaṇaratna. 32. —Śrīpati. 33. —Grahalāghava. 34. —Solar eclipse diagram: Romakasiddhānta. 35. —Saurasiddhānta. 36. Colour of eclipses. 37. Conditions for non-prediction of eclipses. 38. —Inscriptional references: Lunar eclipses. 38. Solar eclipses.

##### 17. Phases of the Moon ... 241

1. Periodical appearance of the Moon. 2. Moon's luminosity. 3. Conditions of Moon's visibility. 4. Preliminaries for computation. 5. Visibility corrections: Ākṣa, Āyana and the Third. 6. Rising and setting of the Moon. 7. Moon's shadow. 8. Computation of Moon's cusps. 9. Moon's cusps—diagram.

##### 18. Heliacal rising and setting of Planets and Stars ... 254

1. Heliacal rising and setting of planets. 2. Days of rising and setting. 3. Planetary elongation for rising and setting. 4. Visibility corrections. 5. Computation of rising and setting. 6. Jupiter's rising and setting. 7. Venus: Rising and setting. 8. Rising and setting of a star. 9. Canopus: Rising.

##### 19. Conjunction of Planets ... 264

1. Types of planetary conjunctions. 2. Conjunction: Principle of computation. 3. Computation of conjunction.

##### 20. Conjunction of Stars and Planets ... 271

1. Conjunction of stars and planets. 2. Principle of planet-star conjunction. 3. Occultation of stars by planets. 4. Occultation of Rohiṇī by planets. 5. Occultation of stars by the Moon. 6. Time of star-planet conjunction.

#### V. INNOVATIVE TRENDS

##### 21. Novel Innovations ... 274

1. True longitude computation on the sphere of the zodiac. 2. Computation of True Moon. 3. Simplified astronomical procedures.

#### IV. OCCULTATION

##### 16. Eclipses ... 196

1. Cause stated in the Ṛgveda. 2. Cause of the lunar eclipse. 3. Lunar eclipse: Principle of computation. 4. Lunar eclipse computation: Vāsiṣṭha and Pauliṣa. 5. —Saurasiddhānta. 6. —Āryabhaṭīya. 7. —Āryabhaṭa's Midnight system. 8. —Emendation by Brahmagupta. 9. —Bhāskara I. 10. —Lalla. 11. —Bhāskara II. 12. —Karaṇaratna. 13. —Śrīpati. 14. —Vākyakaraṇa. 15. —Grahalāghava. 16. Lunar eclipse diagram: Vāsiṣṭha Pauliṣa. 17. —Āryabhaṭa's Midnight system. 18. —Bhāskara I. 19. —Lalla. 20. —Sūryasiddhānta. 21. —Bhāskara II. 22. —Karaṇaratna. 23. Solar eclipse: Computation: Pauliṣa. 24. —Romakasiddhānta. 25. —Saurasiddhānta. 26. —Āryabhaṭa's Midnight system. 27. —Bhāskara I. 28. —Lalla. 29. —Mahāsiddhānta. 30. —Bhāskara II. 31. —Karaṇaratna. 32. —Śrīpati. 33. —Grahalāghava. 34. —Solar eclipse diagram: Romakasiddhānta. 35. —Saurasiddhānta. 36. Colour of eclipses. 37. Conditions for non-prediction of eclipses. 38. —Inscriptional references: Lunar eclipses. 38. Solar eclipses.

##### 17. Phases of the Moon ... 241

1. Periodical appearance of the Moon. 2. Moon's luminosity. 3. Conditions of Moon's visibility. 4. Preliminaries for computation. 5. Visibility corrections: Ākṣa, Āyana and the Third. 6. Rising and setting of the Moon. 7. Moon's shadow. 8. Computation of Moon's cusps. 9. Moon's cusps—diagram.

##### 18. Heliacal rising and setting of Planets and Stars ... 254

1. Heliacal rising and setting of planets. 2. Days of rising and setting. 3. Planetary elongation for rising and setting. 4. Visibility corrections. 5. Computation of rising and setting. 6. Jupiter's rising and setting. 7. Venus: Rising and setting. 8. Rising and setting of a star. 9. Canopus: Rising.

##### 19. Conjunction of Planets ... 264

1. Types of planetary conjunctions. 2. Conjunction: Principle of computation. 3. Computation of conjunction.

##### 20. Conjunction of Stars and Planets ... 271

1. Conjunction of stars and planets. 2. Principle of planet-star conjunction. 3. Occultation of stars by planets. 4. Occultation of Rohiṇī by planets. 5. Occultation of stars by the Moon. 6. Time of star-planet conjunction.

#### V. INNOVATIVE TRENDS

##### 21. Novel Innovations ... 274

1. True longitude computation on the sphere of the zodiac. 2. Computation of True Moon. 3. Simplified astronomical procedures.



#### IV. OCCULTATION

##### 16. Eclipses ... 196

1. Cause stated in the Ṛgveda. 2. Cause of the lunar eclipse. 3. Lunar eclipse: Principle of computation. 4. Lunar eclipse computation: Vāsiṣṭha and Pauliṣa. 5. —Saurasiddhānta. 6. —Āryabhaṭīya. 7. —Āryabhaṭa's Midnight system. 8. —Emendation by Brahmagupta. 9. —Bhāskara I. 10. —Lalla. 11. —Bhāskara II. 12. —Karaṇaratna. 13. —Śrīpati. 14. —Vākyakaraṇa. 15. —Grahalāghava. 16. Lunar eclipse diagram: Vāsiṣṭha Pauliṣa. 17. —Āryabhaṭa's Midnight system. 18. —Bhāskara I. 19. —Lalla. 20. —Sūryasiddhānta. 21. —Bhāskara II. 22. —Karaṇaratna. 23. Solar eclipse: Computation: Pauliṣa. 24. —Romakasiddhānta. 25. —Saurasiddhānta. 26. —Āryabhaṭa's Midnight system. 27. —Bhāskara I. 28. —Lalla. 29. —Mahāsiddhānta. 30. —Bhāskara II. 31. —Karaṇaratna. 32. —Śrīpati. 33. —Grahalāghava. 34. —Solar eclipse diagram: Romakasiddhānta. 35. —Saurasiddhānta. 36. Colour of eclipses. 37. Conditions for non-prediction of eclipses. 38. —Inscriptional references: Lunar eclipses. 38. Solar eclipses.

##### 17. Phases of the Moon ... 241

1. Periodical appearance of the Moon. 2. Moon's luminosity. 3. Conditions of Moon's visibility. 4. Preliminaries for computation. 5. Visibility corrections: Ākṣa, Āyana and the Third. 6. Rising and setting of the Moon. 7. Moon's shadow. 8. Computation of Moon's cusps. 9. Moon's cusps—diagram.

##### 18. Heliacal rising and setting of Planets and Stars ... 254

1. Heliacal rising and setting of planets. 2. Days of rising and setting. 3. Planetary elongation for rising and setting. 4. Visibility corrections. 5. Computation of rising and setting. 6. Jupiter's rising and setting. 7. Venus: Rising and setting. 8. Rising and setting of a star. 9. Canopus: Rising.

##### 19. Conjunction of Planets ... 264

1. Types of planetary conjunctions. 2. Conjunction: Principle of computation. 3. Computation of conjunction.

##### 20. Conjunction of Stars and Planets ... 271

1. Conjunction of stars and planets. 2. Principle of planet-star conjunction. 3. Occultation of stars by planets. 4. Occultation of Rohiṇī by planets. 5. Occultation of stars by the Moon. 6. Time of star-planet conjunction.

#### V. INNOVATIVE TRENDS

##### 21. Novel Innovations ... 274

1. True longitude computation on the sphere of the zodiac. 2. Computation of True Moon. 3. Simplified astronomical procedures.

#### IV. OCCULTATION

##### 16. Eclipses ... 196

1. Cause stated in the Ṛgveda. 2. Cause of the lunar eclipse. 3. Lunar eclipse: Principle of computation. 4. Lunar eclipse computation: Vāsiṣṭha and Pauliṣa. 5. —Saurasiddhānta. 6. —Āryabhaṭīya. 7. —Āryabhaṭa's Midnight system. 8. —Emendation by Brahmagupta. 9. —Bhāskara I. 10. —Lalla. 11. —Bhāskara II. 12. —Karaṇaratna. 13. —Śrīpati. 14. —Vākyakaraṇa. 15. —Grahalāghava. 16. Lunar eclipse diagram: Vāsiṣṭha Pauliṣa. 17. —Āryabhaṭa's Midnight system. 18. —Bhāskara I. 19. —Lalla. 20. —Sūryasiddhānta. 21. —Bhāskara II. 22. —Karaṇaratna. 23. Solar eclipse: Computation: Pauliṣa. 24. —Romakasiddhānta. 25. —Saurasiddhānta. 26. —Āryabhaṭa's Midnight system. 27. —Bhāskara I. 28. —Lalla. 29. —Mahāsiddhānta. 30. —Bhāskara II. 31. —Karaṇaratna. 32. —Śrīpati. 33. —Grahalāghava. 34. —Solar eclipse diagram: Romakasiddhānta. 35. —Saurasiddhānta. 36. Colour of eclipses. 37. Conditions for non-prediction of eclipses. 38. —Inscriptional references: Lunar eclipses. 38. Solar eclipses.

##### 17. Phases of the Moon ... 241

1. Periodical appearance of the Moon. 2. Moon's luminosity. 3. Conditions of Moon's visibility. 4. Preliminaries for computation. 5. Visibility corrections: Ākṣa, Āyana and the Third. 6. Rising and setting of the Moon. 7. Moon's shadow. 8. Computation of Moon's cusps. 9. Moon's cusps—diagram.

##### 18. Heliacal rising and setting of Planets and Stars ... 254

1. Heliacal rising and setting of planets. 2. Days of rising and setting. 3. Planetary elongation for rising and setting. 4. Visibility corrections. 5. Computation of rising and setting. 6. Jupiter's rising and setting. 7. Venus: Rising and setting. 8. Rising and setting of a star. 9. Canopus: Rising.

##### 19. Conjunction of Planets ... 264

1. Types of planetary conjunctions. 2. Conjunction: Principle of computation. 3. Computation of conjunction.

##### 20. Conjunction of Stars and Planets ... 271

1. Conjunction of stars and planets. 2. Principle of planet-star conjunction. 3. Occultation of stars by planets. 4. Occultation of Rohiṇī by planets. 5. Occultation of stars by the Moon. 6. Time of star-planet conjunction.

#### V. INNOVATIVE TRENDS

##### 21. Novel Innovations ... 274

1. True longitude computation on the sphere of the zodiac. 2. Computation of True Moon. 3. Simplified astronomical procedures.

#### IV. OCCULTATION

##### 16. Eclipses ... 196

1. Cause stated in the Ṛgveda. 2. Cause of the lunar eclipse. 3. Lunar eclipse: Principle of computation. 4. Lunar eclipse computation: Vāsiṣṭha and Pauliṣa. 5. —Saurasiddhānta. 6. —Āryabhaṭīya. 7. —Āryabhaṭa's Midnight system. 8. —Emendation by Brahmagupta. 9. —Bhāskara I. 10. —Lalla. 11. —Bhāskara II. 12. —Karaṇaratna. 13. —Śrīpati. 14. —Vākyakaraṇa. 15. —Grahalāghava. 16. Lunar eclipse diagram: Vāsiṣṭha Pauliṣa. 17. —Āryabhaṭa's Midnight system. 18. —Bhāskara I. 19. —Lalla. 20. —Sūryasiddhānta. 21. —Bhāskara II. 22. —Karaṇaratna. 23. Solar eclipse: Computation: Pauliṣa. 24. —Romakasiddhānta. 25. —Saurasiddhānta. 26. —Āryabhaṭa's Midnight system. 27. —Bhāskara I. 28. —Lalla. 29. —Mahāsiddhānta. 30. —Bhāskara II. 31. —Karaṇaratna. 32. —Śrīpati. 33. —Grahalāghava. 34. —Solar eclipse diagram: Romakasiddhānta. 35. —Saurasiddhānta. 36. Colour of eclipses. 37. Conditions for non-prediction of eclipses. 38. —Inscriptional references: Lunar eclipses. 38. Solar eclipses.

##### 17. Phases of the Moon ... 241

1. Periodical appearance of the Moon. 2. Moon's luminosity. 3. Conditions of Moon's visibility. 4. Preliminaries for computation. 5. Visibility corrections: Ākṣa, Āyana and the Third. 6. Rising and setting of the Moon. 7. Moon's shadow. 8. Computation of Moon's cusps. 9. Moon's cusps—diagram.

##### 18. Heliacal rising and setting of Planets and Stars ... 254

1. Heliacal rising and setting of planets. 2. Days of rising and setting. 3. Planetary elongation for rising and setting. 4. Visibility corrections. 5. Computation of rising and setting. 6. Jupiter's rising and setting. 7. Venus: Rising and setting. 8. Rising and setting of a star. 9. Canopus: Rising.

##### 19. Conjunction of Planets ... 264

1. Types of planetary conjunctions. 2. Conjunction: Principle of computation. 3. Computation of conjunction.

##### 20. Conjunction of Stars and Planets ... 271

1. Conjunction of stars and planets. 2. Principle of planet-star conjunction. 3. Occultation of stars by planets. 4. Occultation of Rohiṇī by planets. 5. Occultation of stars by the Moon. 6. Time of star-planet conjunction.

#### V. INNOVATIVE TRENDS

##### 21. Novel Innovations ... 274

1. True longitude computation on the sphere of the zodiac. 2. Computation of True Moon. 3. Simplified astronomical procedures.

#### IV. OCCULTATION

##### 16. Eclipses ... 196

1. Cause stated in the Ṛgveda. 2. Cause of the lunar eclipse. 3. Lunar eclipse: Principle of computation. 4. Lunar eclipse computation: Vāsiṣṭha and Pauliṣa. 5. —Saurasiddhānta. 6. —Āryabhaṭīya. 7. —Āryabhaṭa's Midnight system. 8. —Emendation by Brahmagupta. 9. —Bhāskara I. 10. —Lalla. 11. —Bhāskara II. 12. —Karaṇaratna. 13. —Śrīpati. 14. —Vākyakaraṇa. 15. —Grahalāghava. 16. Lunar eclipse diagram: Vāsiṣṭha Pauliṣa. 17. —Āryabhaṭa's Midnight system. 18. —Bhāskara I. 19. —Lalla. 20. —Sūryasiddhānta. 21. —Bhāskara II. 22. —Karaṇaratna. 23. Solar eclipse: Computation: Pauliṣa. 24. —Romakasiddhānta. 25. —Saurasiddhānta. 26. —Āryabhaṭa's Midnight system. 27. —Bhāskara I. 28. —Lalla. 29. —Mahāsiddhānta. 30. —Bhāskara II. 31. —Karaṇaratna. 32. —Śrīpati. 33. —Grahalāghava. 34. —Solar eclipse diagram: Romakasiddhānta. 35. —Saurasiddhānta. 36. Colour of eclipses. 37. Conditions for non-prediction of eclipses. 38. —Inscriptional references: Lunar eclipses. 38. Solar eclipses.

##### 17. Phases of the Moon ... 241

1. Periodical appearance of the Moon. 2. Moon's luminosity. 3. Conditions of Moon's visibility. 4. Preliminaries for computation. 5. Visibility corrections: Ākṣa, Āyana and the Third. 6. Rising and setting of the Moon. 7. Moon's shadow. 8. Computation of Moon's cusps. 9. Moon's cusps—diagram.

##### 18. Heliacal rising and setting of Planets and Stars ... 254

1. Heliacal rising and setting of planets. 2. Days of rising and setting. 3. Planetary elongation for rising and setting. 4. Visibility corrections. 5. Computation of rising and setting. 6. Jupiter's rising and setting. 7. Venus: Rising and setting. 8. Rising and setting of a star. 9. Canopus: Rising.

##### 19. Conjunction of Planets ... 264

1. Types of planetary conjunctions. 2. Conjunction: Principle of computation. 3. Computation of conjunction.

##### 20. Conjunction of Stars and Planets ... 271

1. Conjunction of stars and planets. 2. Principle of planet-star conjunction. 3. Occultation of stars by planets. 4. Occultation of Rohiṇī by planets. 5. Occultation of stars by the Moon. 6. Time of star-planet conjunction.

#### V. INNOVATIVE TRENDS

##### 21. Novel Innovations ... 274

1. True longitude computation on the sphere of the zodiac. 2. Computation of True Moon. 3. Simplified astronomical procedures.

#### IV. OCCULTATION

##### 16. Eclipses ... 196

1. Cause stated in the Ṛgveda. 2. Cause of the lunar eclipse. 3. Lunar eclipse: Principle of computation. 4. Lunar eclipse computation: Vāsiṣṭha and Pauliṣa. 5. —Saurasiddhānta. 6. —Āryabhaṭīya. 7. —Āryabhaṭa's Midnight system. 8. —Emendation by Brahmagupta. 9. —Bhāskara I. 10. —Lalla. 11. —Bhāskara II. 12. —Karaṇaratna. 13. —Śrīpati. 14. —Vākyakaraṇa. 15. —Grahalāghava. 16. Lunar eclipse diagram: Vāsiṣṭha Pauliṣa. 17. —Āryabhaṭa's Midnight system. 18. —Bhāskara I. 19. —Lalla. 20. —Sūryasiddhānta. 21. —Bhāskara II. 22. —Karaṇaratna. 23. Solar eclipse: Computation: Pauliṣa. 24. —Romakasiddhānta. 25. —Saurasiddhānta. 26. —Āryabhaṭa's Midnight system. 27. —Bhāskara I. 28. —Lalla. 29. —Mahāsiddhānta. 30. —Bhāskara II. 31. —Karaṇaratna. 32. —Śrīpati. 33. —Grahalāghava. 34. —Solar eclipse diagram: Romakasiddhānta. 35. —Saurasiddhānta. 36. Colour of eclipses. 37. Conditions for non-prediction of eclipses. 38. —Inscriptional references: Lunar eclipses. 38. Solar eclipses.

##### 17. Phases of the Moon ... 241

1. Periodical appearance of the Moon. 2. Moon's luminosity. 3. Conditions of Moon's visibility. 4. Preliminaries for computation. 5. Visibility corrections: Ākṣa, Āyana and the Third. 6. Rising and setting of the Moon. 7. Moon's shadow. 8. Computation of Moon's cusps. 9. Moon's cusps—diagram.

##### 18. Heliacal rising and setting of Planets and Stars ... 254

1. Heliacal rising and setting of planets. 2. Days of rising and setting. 3. Planetary elongation for rising and setting. 4. Visibility corrections. 5. Computation of rising and setting. 6. Jupiter's rising and setting. 7. Venus: Rising and setting. 8. Rising and setting of a star. 9. Canopus: Rising.

##### 19. Conjunction of Planets ... 264

1. Types of planetary conjunctions. 2. Conjunction: Principle of computation. 3. Computation of conjunction.

##### 20. Conjunction of Stars and Planets ... 271

1. Conjunction of stars and planets. 2. Principle of planet-star conjunction. 3. Occultation of stars by planets. 4. Occultation of Rohiṇī by planets. 5. Occultation of stars by the Moon. 6. Time of star-planet conjunction.

#### V. INNOVATIVE TRENDS

##### 21. Novel Innovations ... 274

1. True longitude computation on the sphere of the zodiac. 2. Computation of True Moon. 3. Simplified astronomical procedures.

#### IV. OCCULTATION

##### 16. Eclipses ... 196

1. Cause stated in the Ṛgveda. 2. Cause of the lunar eclipse. 3. Lunar eclipse: Principle of computation. 4. Lunar eclipse computation: Vāsiṣṭha and Pauliṣa. 5. —Saurasiddhānta. 6. —Āryabhaṭīya. 7. —Āryabhaṭa's Midnight system. 8. —Emendation by Brahmagupta. 9. —Bhāskara I. 10. —Lalla. 11. —Bhāskara II. 12. —Karaṇaratna. 13. —Śrīpati. 14. —Vākyakaraṇa. 15. —Grahalāghava. 16. Lunar eclipse diagram: Vāsiṣṭha Pauliṣa. 17. —Āryabhaṭa's Midnight system. 18. —Bhāskara I. 19. —Lalla. 20. —Sūryasiddhānta. 21. —Bhāskara II. 22. —Karaṇaratna. 23. Solar eclipse: Computation: Pauliṣa. 24. —Romakasiddhānta. 25. —Saurasiddhānta. 26. —Āryabhaṭa's Midnight system. 27. —Bhāskara I. 28. —Lalla. 29. —Mahāsiddhānta. 30. —Bhāskara II. 31. —Karaṇaratna. 32. —Śrīpati. 33. —Grahalāghava. 34. —Solar eclipse diagram: Romakasiddhānta. 35. —Saurasiddhānta. 36. Colour of eclipses. 37. Conditions for non-prediction of eclipses. 38. —Inscriptional references: Lunar eclipses. 38. Solar eclipses.

##### 17. Phases of the Moon ... 241

1. Periodical appearance of the Moon. 2. Moon's luminosity. 3. Conditions of Moon's visibility. 4. Preliminaries for computation. 5. Visibility corrections: Ākṣa, Āyana and the Third. 6. Rising and setting of the Moon. 7. Moon's shadow. 8. Computation of Moon's cusps. 9. Moon's cusps—diagram.

##### 18. Heliacal rising and setting of Planets and Stars ... 254

1. Heliacal rising and setting of planets. 2. Days of rising and setting. 3. Planetary elongation for rising and setting. 4. Visibility corrections. 5. Computation of rising and setting. 6. Jupiter's rising and setting. 7. Venus: Rising and setting. 8. Rising and setting of a star. 9. Canopus: Rising.

##### 19. Conjunction of Planets ... 264

1. Types of planetary conjunctions. 2. Conjunction: Principle of computation. 3. Computation of conjunction.

##### 20. Conjunction of Stars and Planets ... 271

1. Conjunction of stars and planets. 2. Principle of planet-star conjunction. 3. Occultation of stars by planets. 4. Occultation of Rohiṇī by planets. 5. Occultation of stars by the Moon. 6. Time of star-planet conjunction.

#### V. INNOVATIVE TRENDS

##### 21. Novel Innovations ... 274

1. True longitude computation on the sphere of the zodiac. 2. Computation of True Moon. 3. Simplified astronomical procedures.

#### IV. OCCULTATION

##### 16. Eclipses ... 196

1. Cause stated in the Ṛgveda. 2. Cause of the lunar eclipse. 3. Lunar eclipse: Principle of computation. 4. Lunar eclipse computation: Vāsiṣṭha and Pauliṣa. 5. —Saurasiddhānta. 6. —Āryabhaṭīya. 7. —Āryabhaṭa's Midnight system. 8. —Emendation by Brahmagupta. 9. —Bhāskara I. 10. —Lalla. 11. —Bhāskara II. 12. —Karaṇaratna. 13. —Śrīpati. 14. —Vākyakaraṇa. 15. —Grahalāghava. 16. Lunar eclipse diagram: Vāsiṣṭha Pauliṣa. 17. —Āryabhaṭa's Midnight system. 18. —Bhāskara I. 19. —Lalla. 20. —Sūryasiddhānta. 21. —Bhāskara II. 22. —Karaṇaratna. 23. Solar eclipse: Computation: Pauliṣa. 24. —Romakasiddhānta. 25. —Saurasiddhānta. 26. —Āryabhaṭa's Midnight system. 27. —Bhāskara I. 28. —Lalla. 29. —Mahāsiddhānta. 30. —Bhāskara II. 31. —Karaṇaratna. 32. —Śrīpati. 33. —Grahalāghava. 34. —Solar eclipse diagram: Romakasiddhānta. 35. —Saurasiddhānta. 36. Colour of eclipses. 37. Conditions for non-prediction of eclipses. 38. —Inscriptional references: Lunar eclipses. 38. Solar eclipses.

##### 17. Phases of the Moon ... 241

1. Periodical appearance of the Moon. 2. Moon's luminosity. 3. Conditions of Moon's visibility. 4. Preliminaries for computation. 5. Visibility corrections: Ākṣa, Āyana and the Third. 6. Rising and setting of the Moon. 7. Moon's shadow. 8. Computation of Moon's cusps. 9. Moon's cusps—diagram.

##### 18. Heliacal rising and setting of Planets and Stars ... 254

1. Heliacal rising and setting of planets. 2. Days of rising and setting. 3. Planetary elongation for rising and setting. 4. Visibility corrections. 5. Computation of rising and setting. 6. Jupiter's rising and setting. 7. Venus: Rising and setting. 8. Rising and setting of a star. 9. Canopus: Rising.

##### 19. Conjunction of Planets ... 264

1. Types of planetary conjunctions. 2. Conjunction: Principle of computation. 3. Computation of conjunction.

##### 20. Conjunction of Stars and Planets ... 271

1. Conjunction of stars and planets. 2. Principle of planet-star conjunction. 3. Occultation of stars by planets. 4. Occultation of Rohiṇī by planets. 5. Occultation of stars by the Moon. 6. Time of star-planet conjunction.

#### V. INNOVATIVE TRENDS

##### 21. Novel Innovations ... 274

1. True longitude computation on the sphere of the zodiac. 2. Computation of True Moon. 3. Simplified astronomical procedures.

#### IV. OCCULTATION

##### 16. Eclipses ... 196

1. Cause stated in the Ṛgveda. 2. Cause of the lunar eclipse. 3. Lunar eclipse: Principle of computation. 4. Lunar eclipse computation: Vāsiṣṭha and Pauliṣa. 5. —Saurasiddhānta. 6. —Āryabhaṭīya. 7. —Āryabhaṭa's Midnight system. 8. —Emendation by Brahmagupta. 9. —Bhāskara I. 10. —Lalla. 11. —Bhāskara II. 12. —Karaṇaratna. 13. —Śrīpati. 14. —Vākyakaraṇa. 15. —Grahalāghava. 16. Lunar eclipse diagram: Vāsiṣṭha Pauliṣa. 17. —Āryabhaṭa's Midnight system. 18. —Bhāskara I. 19. —Lalla. 20. —Sūryasiddhānta. 21. —Bhāskara II. 22. —Karaṇaratna. 23. Solar eclipse: Computation: Pauliṣa. 24. —Romakasiddhānta. 25. —Saurasiddhānta. 26. —Āryabhaṭa's Midnight system. 27. —Bhāskara I. 28. —Lalla. 29. —Mahāsiddhānta. 30. —Bhāskara II. 31. —Karaṇaratna. 32. —Śrīpati. 33. —Grahalāghava. 34. —Solar eclipse diagram: Romakasiddhānta. 35. —Saurasiddhānta. 36. Colour of eclipses. 37. Conditions for non-prediction of eclipses. 38. —Inscriptional references: Lunar eclipses. 38. Solar eclipses.

##### 17. Phases of the Moon ... 241

1. Periodical appearance of the Moon. 2. Moon's luminosity. 3. Conditions of Moon's visibility. 4. Preliminaries for computation. 5. Visibility corrections: Ākṣa, Āyana and the Third. 6. Rising and setting of the Moon. 7. Moon's shadow. 8. Computation of Moon's cusps. 9. Moon's cusps—diagram.

##### 18. Heliacal rising and setting of Planets and Stars ... 254

1. Heliacal rising and setting of planets. 2. Days of rising and setting. 3. Planetary elongation for rising and setting. 4. Visibility corrections. 5. Computation of rising and setting. 6. Jupiter's rising and setting. 7. Venus: Rising and setting. 8. Rising and setting of a star. 9. Canopus: Rising.

##### 19. Conjunction of Planets ... 264

1. Types of planetary conjunctions. 2. Conjunction: Principle of computation. 3. Computation of conjunction.

##### 20. Conjunction of Stars and Planets ... 271

1. Conjunction of stars and planets. 2. Principle of planet-star conjunction. 3. Occultation of stars by planets. 4. Occultation of Rohiṇī by planets. 5. Occultation of stars by the Moon. 6. Time of star-planet conjunction.

#### V. INNOVATIVE TRENDS

##### 21. Novel Innovations ... 274

1. True longitude computation on the sphere of the zodiac. 2. Computation of True Moon. 3. Simplified astronomical procedures.



#### IV. OCCULTATION

##### 16. Eclipses ... 196

1. Cause stated in the Ṛgveda. 2. Cause of the lunar eclipse. 3. Lunar eclipse: Principle of computation. 4. Lunar eclipse computation: Vāsiṣṭha and Pauliṣa. 5. —Saurasiddhānta. 6. —Āryabhaṭīya. 7. —Āryabhaṭa's Midnight system. 8. —Emendation by Brahmagupta. 9. —Bhāskara I. 10. —Lalla. 11. —Bhāskara II. 12. —Karaṇaratna. 13. —Śrīpati. 14. —Vākyakaraṇa. 15. —Grahalāghava. 16. Lunar eclipse diagram: Vāsiṣṭha Pauliṣa. 17. —Āryabhaṭa's Midnight system. 18. —Bhāskara I. 19. —Lalla. 20. —Sūryasiddhānta. 21. —Bhāskara II. 22. —Karaṇaratna. 23. Solar eclipse: Computation: Pauliṣa. 24. —Romakasiddhānta. 25. —Saurasiddhānta. 26. —Āryabhaṭa's Midnight system. 27. —Bhāskara I. 28. —Lalla. 29. —Mahāsiddhānta. 30. —Bhāskara II. 31. —Karaṇaratna. 32. —Śrīpati. 33. —Grahalāghava. 34. —Solar eclipse diagram: Romakasiddhānta. 35. —Saurasiddhānta. 36. Colour of eclipses. 37. Conditions for non-prediction of eclipses. 38. —Inscriptional references: Lunar eclipses. 38. Solar eclipses.

##### 17. Phases of the Moon ... 241

1. Periodical appearance of the Moon. 2. Moon's luminosity. 3. Conditions of Moon's visibility. 4. Preliminaries for computation. 5. Visibility corrections: Ākṣa, Āyana and the Third. 6. Rising and setting of the Moon. 7. Moon's shadow. 8. Computation of Moon's cusps. 9. Moon's cusps—diagram.

##### 18. Heliacal rising and setting of Planets and Stars ... 254

1. Heliacal rising and setting of planets. 2. Days of rising and setting. 3. Planetary elongation for rising and setting. 4. Visibility corrections. 5. Computation of rising and setting. 6. Jupiter's rising and setting. 7. Venus: Rising and setting. 8. Rising and setting of a star. 9. Canopus: Rising.

##### 19. Conjunction of Planets ... 264

1. Types of planetary conjunctions. 2. Conjunction: Principle of computation. 3. Computation of conjunction.

##### 20. Conjunction of Stars and Planets ... 271

1. Conjunction of stars and planets. 2. Principle of planet-star conjunction. 3. Occultation of stars by planets. 4. Occultation of Rohiṇī by planets. 5. Occultation of stars by the Moon. 6. Time of star-planet conjunction.

#### V. INNOVATIVE TRENDS

##### 21. Novel Innovations ... 274

1. True longitude computation on the sphere of the zodiac. 2. Computation of True Moon. 3. Simplified astronomical procedures.

#### IV. OCCULTATION

##### 16. Eclipses ... 196

1. Cause stated in the Ṛgveda. 2. Cause of the lunar eclipse. 3. Lunar eclipse: Principle of computation. 4. Lunar eclipse computation: Vāsiṣṭha and Pauliṣa. 5. —Saurasiddhānta. 6. —Āryabhaṭīya. 7. —Āryabhaṭa's Midnight system. 8. —Emendation by Brahmagupta. 9. —Bhāskara I. 10. —Lalla. 11. —Bhāskara II. 12. —Karaṇaratna. 13. —Śrīpati. 14. —Vākyakaraṇa. 15. —Grahalāghava. 16. Lunar eclipse diagram: Vāsiṣṭha Pauliṣa. 17. —Āryabhaṭa's Midnight system. 18. —Bhāskara I. 19. —Lalla. 20. —Sūryasiddhānta. 21. —Bhāskara II. 22. —Karaṇaratna. 23. Solar eclipse: Computation: Pauliṣa. 24. —Romakasiddhānta. 25. —Saurasiddhānta. 26. —Āryabhaṭa's Midnight system. 27. —Bhāskara I. 28. —Lalla. 29. —Mahāsiddhānta. 30. —Bhāskara II. 31. —Karaṇaratna. 32. —Śrīpati. 33. —Grahalāghava. 34. —Solar eclipse diagram: Romakasiddhānta. 35. —Saurasiddhānta. 36. Colour of eclipses. 37. Conditions for non-prediction of eclipses. 38. —Inscriptional references: Lunar eclipses. 38. Solar eclipses.

##### 17. Phases of the Moon ... 241

1. Periodical appearance of the Moon. 2. Moon's luminosity. 3. Conditions of Moon's visibility. 4. Preliminaries for computation. 5. Visibility corrections: Ākṣa, Āyana and the Third. 6. Rising and setting of the Moon. 7. Moon's shadow. 8. Computation of Moon's cusps. 9. Moon's cusps—diagram.

##### 18. Heliacal rising and setting of Planets and Stars ... 254

1. Heliacal rising and setting of planets. 2. Days of rising and setting. 3. Planetary elongation for rising and setting. 4. Visibility corrections. 5. Computation of rising and setting. 6. Jupiter's rising and setting. 7. Venus: Rising and setting. 8. Rising and setting of a star. 9. Canopus: Rising.

##### 19. Conjunction of Planets ... 264

1. Types of planetary conjunctions. 2. Conjunction: Principle of computation. 3. Computation of conjunction.

##### 20. Conjunction of Stars and Planets ... 271

1. Conjunction of stars and planets. 2. Principle of planet-star conjunction. 3. Occultation of stars by planets. 4. Occultation of Rohiṇī by planets. 5. Occultation of stars by the Moon. 6. Time of star-planet conjunction.

#### V. INNOVATIVE TRENDS

##### 21. Novel Innovations ... 274

1. True longitude computation on the sphere of the zodiac. 2. Computation of True Moon. 3. Simplified astronomical procedures.

#### IV. OCCULTATION

##### 16. Eclipses ... 196

1. Cause stated in the Ṛgveda. 2. Cause of the lunar eclipse. 3. Lunar eclipse: Principle of computation. 4. Lunar eclipse computation: Vāsiṣṭha and Pauliṣa. 5. —Saurasiddhānta. 6. —Āryabhaṭīya. 7. —Āryabhaṭa's Midnight system. 8. —Emendation by Brahmagupta. 9. —Bhāskara I. 10. —Lalla. 11. —Bhāskara II. 12. —Karaṇaratna. 13. —Śrīpati. 14. —Vākyakaraṇa. 15. —Grahalāghava. 16. Lunar eclipse diagram: Vāsiṣṭha Pauliṣa. 17. —Āryabhaṭa's Midnight system. 18. —Bhāskara I. 19. —Lalla. 20. —Sūryasiddhānta. 21. —Bhāskara II. 22. —Karaṇaratna. 23. Solar eclipse: Computation: Pauliṣa. 24. —Romakasiddhānta. 25. —Saurasiddhānta. 26. —Āryabhaṭa's Midnight system. 27. —Bhāskara I. 28. —Lalla. 29. —Mahāsiddhānta. 30. —Bhāskara II. 31. —Karaṇaratna. 32. —Śrīpati. 33. —Grahalāghava. 34. —Solar eclipse diagram: Romakasiddhānta. 35. —Saurasiddhānta. 36. Colour of eclipses. 37. Conditions for non-prediction of eclipses. 38. —Inscriptional references: Lunar eclipses. 38. Solar eclipses.

##### 17. Phases of the Moon ... 241

1. Periodical appearance of the Moon. 2. Moon's luminosity. 3. Conditions of Moon's visibility. 4. Preliminaries for computation. 5. Visibility corrections: Ākṣa, Āyana and the Third. 6. Rising and setting of the Moon. 7. Moon's shadow. 8. Computation of Moon's cusps. 9. Moon's cusps—diagram.

##### 18. Heliacal rising and setting of Planets and Stars ... 254

1. Heliacal rising and setting of planets. 2. Days of rising and setting. 3. Planetary elongation for rising and setting. 4. Visibility corrections. 5. Computation of rising and setting. 6. Jupiter's rising and setting. 7. Venus: Rising and setting. 8. Rising and setting of a star. 9. Canopus: Rising.

##### 19. Conjunction of Planets ... 264

1. Types of planetary conjunctions. 2. Conjunction: Principle of computation. 3. Computation of conjunction.

##### 20. Conjunction of Stars and Planets ... 271

1. Conjunction of stars and planets. 2. Principle of planet-star conjunction. 3. Occultation of stars by planets. 4. Occultation of Rohiṇī by planets. 5. Occultation of stars by the Moon. 6. Time of star-planet conjunction.

#### V. INNOVATIVE TRENDS

##### 21. Novel Innovations ... 274

1. True longitude computation on the sphere of the zodiac. 2. Computation of True Moon. 3. Simplified astronomical procedures.

#### IV. OCCULTATION

##### 16. Eclipses ... 196

1. Cause stated in the Ṛgveda. 2. Cause of the lunar eclipse. 3. Lunar eclipse: Principle of computation. 4. Lunar eclipse computation: Vāsiṣṭha and Pauliṣa. 5. —Saurasiddhānta. 6. —Āryabhaṭīya. 7. —Āryabhaṭa's Midnight system. 8. —Emendation by Brahmagupta. 9. —Bhāskara I. 10. —Lalla. 11. —Bhāskara II. 12. —Karaṇaratna. 13. —Śrīpati. 14. —Vākyakaraṇa. 15. —Grahalāghava. 16. Lunar eclipse diagram: Vāsiṣṭha Pauliṣa. 17. —Āryabhaṭa's Midnight system. 18. —Bhāskara I. 19. —Lalla. 20. —Sūryasiddhānta. 21. —Bhāskara II. 22. —Karaṇaratna. 23. Solar eclipse: Computation: Pauliṣa. 24. —Romakasiddhānta. 25. —Saurasiddhānta. 26. —Āryabhaṭa's Midnight system. 27. —Bhāskara I. 28. —Lalla. 29. —Mahāsiddhānta. 30. —Bhāskara II. 31. —Karaṇaratna. 32. —Śrīpati. 33. —Grahalāghava. 34. —Solar eclipse diagram: Romakasiddhānta. 35. —Saurasiddhānta. 36. Colour of eclipses. 37. Conditions for non-prediction of eclipses. 38. —Inscriptional references: Lunar eclipses. 38. Solar eclipses.

##### 17. Phases of the Moon ... 241

1. Periodical appearance of the Moon. 2. Moon's luminosity. 3. Conditions of Moon's visibility. 4. Preliminaries for computation. 5. Visibility corrections: Ākṣa, Āyana and the Third. 6. Rising and setting of the Moon. 7. Moon's shadow. 8. Computation of Moon's cusps. 9. Moon's cusps—diagram.

##### 18. Heliacal rising and setting of Planets and Stars ... 254

1. Heliacal rising and setting of planets. 2. Days of rising and setting. 3. Planetary elongation for rising and setting. 4. Visibility corrections. 5. Computation of rising and setting. 6. Jupiter's rising and setting. 7. Venus: Rising and setting. 8. Rising and setting of a star. 9. Canopus: Rising.

##### 19. Conjunction of Planets ... 264

1. Types of planetary conjunctions. 2. Conjunction: Principle of computation. 3. Computation of conjunction.

##### 20. Conjunction of Stars and Planets ... 271

1. Conjunction of stars and planets. 2. Principle of planet-star conjunction. 3. Occultation of stars by planets. 4. Occultation of Rohiṇī by planets. 5. Occultation of stars by the Moon. 6. Time of star-planet conjunction.

#### V. INNOVATIVE TRENDS

##### 21. Novel Innovations ... 274

1. True longitude computation on the sphere of the zodiac. 2. Computation of True Moon. 3. Simplified astronomical procedures.

#### IV. OCCULTATION

##### 16. Eclipses ... 196

1. Cause stated in the Ṛgveda. 2. Cause of the lunar eclipse. 3. Lunar eclipse: Principle of computation. 4. Lunar eclipse computation: Vāsiṣṭha and Pauliṣa. 5. —Saurasiddhānta. 6. —Āryabhaṭīya. 7. —Āryabhaṭa's Midnight system. 8. —Emendation by Brahmagupta. 9. —Bhāskara I. 10. —Lalla. 11. —Bhāskara II. 12. —Karaṇaratna. 13. —Śrīpati. 14. —Vākyakaraṇa. 15. —Grahalāghava. 16. Lunar eclipse diagram: Vāsiṣṭha Pauliṣa. 17. —Āryabhaṭa's Midnight system. 18. —Bhāskara I. 19. —Lalla. 20. —Sūryasiddhānta. 21. —Bhāskara II. 22. —Karaṇaratna. 23. Solar eclipse: Computation: Pauliṣa. 24. —Romakasiddhānta. 25. —Saurasiddhānta. 26. —Āryabhaṭa's Midnight system. 27. —Bhāskara I. 28. —Lalla. 29. —Mahāsiddhānta. 30. —Bhāskara II. 31. —Karaṇaratna. 32. —Śrīpati. 33. —Grahalāghava. 34. —Solar eclipse diagram: Romakasiddhānta. 35. —Saurasiddhānta. 36. Colour of eclipses. 37. Conditions for non-prediction of eclipses. 38. —Inscriptional references: Lunar eclipses. 38. Solar eclipses.

##### 17. Phases of the Moon ... 241

1. Periodical appearance of the Moon. 2. Moon's luminosity. 3. Conditions of Moon's visibility. 4. Preliminaries for computation. 5. Visibility corrections: Ākṣa, Āyana and the Third. 6. Rising and setting of the Moon. 7. Moon's shadow. 8. Computation of Moon's cusps. 9. Moon's cusps—diagram.

##### 18. Heliacal rising and setting of Planets and Stars ... 254

1. Heliacal rising and setting of planets. 2. Days of rising and setting. 3. Planetary elongation for rising and setting. 4. Visibility corrections. 5. Computation of rising and setting. 6. Jupiter's rising and setting. 7. Venus: Rising and setting. 8. Rising and setting of a star. 9. Canopus: Rising.

##### 19. Conjunction of Planets ... 264

1. Types of planetary conjunctions. 2. Conjunction: Principle of computation. 3. Computation of conjunction.

##### 20. Conjunction of Stars and Planets ... 271

1. Conjunction of stars and planets. 2. Principle of planet-star conjunction. 3. Occultation of stars by planets. 4. Occultation of Rohiṇī by planets. 5. Occultation of stars by the Moon. 6. Time of star-planet conjunction.

#### V. INNOVATIVE TRENDS

##### 21. Novel Innovations ... 274

1. True longitude computation on the sphere of the zodiac. 2. Computation of True Moon. 3. Simplified astronomical procedures.

#### IV. OCCULTATION

##### 16. Eclipses ... 196

1. Cause stated in the Ṛgveda. 2. Cause of the lunar eclipse. 3. Lunar eclipse: Principle of computation. 4. Lunar eclipse computation: Vāsiṣṭha and Pauliṣa. 5. —Saurasiddhānta. 6. —Āryabhaṭīya. 7. —Āryabhaṭa's Midnight system. 8. —Emendation by Brahmagupta. 9. —Bhāskara I. 10. —Lalla. 11. —Bhāskara II. 12. —Karaṇaratna. 13. —Śrīpati. 14. —Vākyakaraṇa. 15. —Grahalāghava. 16. Lunar eclipse diagram: Vāsiṣṭha Pauliṣa. 17. —Āryabhaṭa's Midnight system. 18. —Bhāskara I. 19. —Lalla. 20. —Sūryasiddhānta. 21. —Bhāskara II. 22. —Karaṇaratna. 23. Solar eclipse: Computation: Pauliṣa. 24. —Romakasiddhānta. 25. —Saurasiddhānta. 26. —Āryabhaṭa's Midnight system. 27. —Bhāskara I. 28. —Lalla. 29. —Mahāsiddhānta. 30. —Bhāskara II. 31. —Karaṇaratna. 32. —Śrīpati. 33. —Grahalāghava. 34. —Solar eclipse diagram: Romakasiddhānta. 35. —Saurasiddhānta. 36. Colour of eclipses. 37. Conditions for non-prediction of eclipses. 38. —Inscriptional references: Lunar eclipses. 38. Solar eclipses.

##### 17. Phases of the Moon ... 241

1. Periodical appearance of the Moon. 2. Moon's luminosity. 3. Conditions of Moon's visibility. 4. Preliminaries for computation. 5. Visibility corrections: Ākṣa, Āyana and the Third. 6. Rising and setting of the Moon. 7. Moon's shadow. 8. Computation of Moon's cusps. 9. Moon's cusps—diagram.

##### 18. Heliacal rising and setting of Planets and Stars ... 254

1. Heliacal rising and setting of planets. 2. Days of rising and setting. 3. Planetary elongation for rising and setting. 4. Visibility corrections. 5. Computation of rising and setting. 6. Jupiter's rising and setting. 7. Venus: Rising and setting. 8. Rising and setting of a star. 9. Canopus: Rising.

##### 19. Conjunction of Planets ... 264

1. Types of planetary conjunctions. 2. Conjunction: Principle of computation. 3. Computation of conjunction.

##### 20. Conjunction of Stars and Planets ... 271

1. Conjunction of stars and planets. 2. Principle of planet-star conjunction. 3. Occultation of stars by planets. 4. Occultation of Rohiṇī by planets. 5. Occultation of stars by the Moon. 6. Time of star-planet conjunction.

#### V. INNOVATIVE TRENDS

##### 21. Novel Innovations ... 274

1. True longitude computation on the sphere of the zodiac. 2. Computation of True Moon. 3. Simplified astronomical procedures.

#### IV. OCCULTATION

##### 16. Eclipses ... 196

1. Cause stated in the Ṛgveda. 2. Cause of the lunar eclipse. 3. Lunar eclipse: Principle of computation. 4. Lunar eclipse computation: Vāsiṣṭha and Pauliṣa. 5. —Saurasiddhānta. 6. —Āryabhaṭīya. 7. —Āryabhaṭa's Midnight system. 8. —Emendation by Brahmagupta. 9. —Bhāskara I. 10. —Lalla. 11. —Bhāskara II. 12. —Karaṇaratna. 13. —Śrīpati. 14. —Vākyakaraṇa. 15. —Grahalāghava. 16. Lunar eclipse diagram: Vāsiṣṭha Pauliṣa. 17. —Āryabhaṭa's Midnight system. 18. —Bhāskara I. 19. —Lalla. 20. —Sūryasiddhānta. 21. —Bhāskara II. 22. —Karaṇaratna. 23. Solar eclipse: Computation: Pauliṣa. 24. —Romakasiddhānta. 25. —Saurasiddhānta. 26. —Āryabhaṭa's Midnight system. 27. —Bhāskara I. 28. —Lalla. 29. —Mahāsiddhānta. 30. —Bhāskara II. 31. —Karaṇaratna. 32. —Śrīpati. 33. —Grahalāghava. 34. —Solar eclipse diagram: Romakasiddhānta. 35. —Saurasiddhānta. 36. Colour of eclipses. 37. Conditions for non-prediction of eclipses. 38. —Inscriptional references: Lunar eclipses. 38. Solar eclipses.

##### 17. Phases of the Moon ... 241

1. Periodical appearance of the Moon. 2. Moon's luminosity. 3. Conditions of Moon's visibility. 4. Preliminaries for computation. 5. Visibility corrections: Ākṣa, Āyana and the Third. 6. Rising and setting of the Moon. 7. Moon's shadow. 8. Computation of Moon's cusps. 9. Moon's cusps—diagram.

##### 18. Heliacal rising and setting of Planets and Stars ... 254

1. Heliacal rising and setting of planets. 2. Days of rising and setting. 3. Planetary elongation for rising and setting. 4. Visibility corrections. 5. Computation of rising and setting. 6. Jupiter's rising and setting. 7. Venus: Rising and setting. 8. Rising and setting of a star. 9. Canopus: Rising.

##### 19. Conjunction of Planets ... 264

1. Types of planetary conjunctions. 2. Conjunction: Principle of computation. 3. Computation of conjunction.

##### 20. Conjunction of Stars and Planets ... 271

1. Conjunction of stars and planets. 2. Principle of planet-star conjunction. 3. Occultation of stars by planets. 4. Occultation of Rohiṇī by planets. 5. Occultation of stars by the Moon. 6. Time of star-planet conjunction.

#### V. INNOVATIVE TRENDS

##### 21. Novel Innovations ... 274

1. True longitude computation on the sphere of the zodiac. 2. Computation of True Moon. 3. Simplified astronomical procedures.

#### IV. OCCULTATION

##### 16. Eclipses ... 196

1. Cause stated in the Ṛgveda. 2. Cause of the lunar eclipse. 3. Lunar eclipse: Principle of computation. 4. Lunar eclipse computation: Vāsiṣṭha and Pauliṣa. 5. —Saurasiddhānta. 6. —Āryabhaṭīya. 7. —Āryabhaṭa's Midnight system. 8. —Emendation by Brahmagupta. 9. —Bhāskara I. 10. —Lalla. 11. —Bhāskara II. 12. —Karaṇaratna. 13. —Śrīpati. 14. —Vākyakaraṇa. 15. —Grahalāghava. 16. Lunar eclipse diagram: Vāsiṣṭha Pauliṣa. 17. —Āryabhaṭa's Midnight system. 18. —Bhāskara I. 19. —Lalla. 20. —Sūryasiddhānta. 21. —Bhāskara II. 22. —Karaṇaratna. 23. Solar eclipse: Computation: Pauliṣa. 24. —Romakasiddhānta. 25. —Saurasiddhānta. 26. —Āryabhaṭa's Midnight system. 27. —Bhāskara I. 28. —Lalla. 29. —Mahāsiddhānta. 30. —Bhāskara II. 31. —Karaṇaratna. 32. —Śrīpati. 33. —Grahalāghava. 34. —Solar eclipse diagram: Romakasiddhānta. 35. —Saurasiddhānta. 36. Colour of eclipses. 37. Conditions for non-prediction of eclipses. 38. —Inscriptional references: Lunar eclipses. 38. Solar eclipses.

##### 17. Phases of the Moon ... 241

1. Periodical appearance of the Moon. 2. Moon's luminosity. 3. Conditions of Moon's visibility. 4. Preliminaries for computation. 5. Visibility corrections: Ākṣa, Āyana and the Third. 6. Rising and setting of the Moon. 7. Moon's shadow. 8. Computation of Moon's cusps. 9. Moon's cusps—diagram.

##### 18. Heliacal rising and setting of Planets and Stars ... 254

1. Heliacal rising and setting of planets. 2. Days of rising and setting. 3. Planetary elongation for rising and setting. 4. Visibility corrections. 5. Computation of rising and setting. 6. Jupiter's rising and setting. 7. Venus: Rising and setting. 8. Rising and setting of a star. 9. Canopus: Rising.

##### 19. Conjunction of Planets ... 264

1. Types of planetary conjunctions. 2. Conjunction: Principle of computation. 3. Computation of conjunction.

##### 20. Conjunction of Stars and Planets ... 271

1. Conjunction of stars and planets. 2. Principle of planet-star conjunction. 3. Occultation of stars by planets. 4. Occultation of Rohiṇī by planets. 5. Occultation of stars by the Moon. 6. Time of star-planet conjunction.

#### V. INNOVATIVE TRENDS

##### 21. Novel Innovations ... 274

1. True longitude computation on the sphere of the zodiac. 2. Computation of True Moon. 3. Simplified astronomical procedures.



#### IV. OCCULTATION

##### 16. Eclipses ... 196

1. Cause stated in the Ṛgveda. 2. Cause of the lunar eclipse. 3. Lunar eclipse: Principle of computation. 4. Lunar eclipse computation: Vāsiṣṭha and Pauliṣa. 5. —Saurasiddhānta. 6. —Āryabhaṭīya. 7. —Āryabhaṭa's Midnight system. 8. —Emendation by Brahmagupta. 9. —Bhāskara I. 10. —Lalla. 11. —Bhāskara II. 12. —Karaṇaratna. 13. —Śrīpati. 14. —Vākyakaraṇa. 15. —Grahalāghava. 16. Lunar eclipse diagram: Vāsiṣṭha Pauliṣa. 17. —Āryabhaṭa's Midnight system. 18. —Bhāskara I. 19. —Lalla. 20. —Sūryasiddhānta. 21. —Bhāskara II. 22. —Karaṇaratna. 23. Solar eclipse: Computation: Pauliṣa. 24. —Romakasiddhānta. 25. —Saurasiddhānta. 26. —Āryabhaṭa's Midnight system. 27. —Bhāskara I. 28. —Lalla. 29. —Mahāsiddhānta. 30. —Bhāskara II. 31. —Karaṇaratna. 32. —Śrīpati. 33. —Grahalāghava. 34. —Solar eclipse diagram: Romakasiddhānta. 35. —Saurasiddhānta. 36. Colour of eclipses. 37. Conditions for non-prediction of eclipses. 38. —Inscriptional references: Lunar eclipses. 38. Solar eclipses.

##### 17. Phases of the Moon ... 241

1. Periodical appearance of the Moon. 2. Moon's luminosity. 3. Conditions of Moon's visibility. 4. Preliminaries for computation. 5. Visibility corrections: Ākṣa, Āyana and the Third. 6. Rising and setting of the Moon. 7. Moon's shadow. 8. Computation of Moon's cusps. 9. Moon's cusps—diagram.

##### 18. Heliacal rising and setting of Planets and Stars ... 254

1. Heliacal rising and setting of planets. 2. Days of rising and setting. 3. Planetary elongation for rising and setting. 4. Visibility corrections. 5. Computation of rising and setting. 6. Jupiter's rising and setting. 7. Venus: Rising and setting. 8. Rising and setting of a star. 9. Canopus: Rising.

##### 19. Conjunction of Planets ... 264

1. Types of planetary conjunctions. 2. Conjunction: Principle of computation. 3. Computation of conjunction.

##### 20. Conjunction of Stars and Planets ... 271

1. Conjunction of stars and planets. 2. Principle of planet-star conjunction. 3. Occultation of stars by planets. 4. Occultation of Rohiṇī by planets. 5. Occultation of stars by the Moon. 6. Time of star-planet conjunction.

#### V. INNOVATIVE TRENDS

##### 21. Novel Innovations ... 274

1. True longitude computation on the sphere of the zodiac. 2. Computation of True Moon. 3. Simplified astronomical procedures.

#### IV. OCCULTATION

##### 16. Eclipses ... 196

1. Cause stated in the Ṛgveda. 2. Cause of the lunar eclipse. 3. Lunar eclipse: Principle of computation. 4. Lunar eclipse computation: Vāsiṣṭha and Pauliṣa. 5. —Saurasiddhānta. 6. —Āryabhaṭīya. 7. —Āryabhaṭa's Midnight system. 8. —Emendation by Brahmagupta. 9. —Bhāskara I. 10. —Lalla. 11. —Bhāskara II. 12. —Karaṇaratna. 13. —Śrīpati. 14. —Vākyakaraṇa. 15. —Grahalāghava. 16. Lunar eclipse diagram: Vāsiṣṭha Pauliṣa. 17. —Āryabhaṭa's Midnight system. 18. —Bhāskara I. 19. —Lalla. 20. —Sūryasiddhānta. 21. —Bhāskara II. 22. —Karaṇaratna. 23. Solar eclipse: Computation: Pauliṣa. 24. —Romakasiddhānta. 25. —Saurasiddhānta. 26. —Āryabhaṭa's Midnight system. 27. —Bhāskara I. 28. —Lalla. 29. —Mahāsiddhānta. 30. —Bhāskara II. 31. —Karaṇaratna. 32. —Śrīpati. 33. —Grahalāghava. 34. —Solar eclipse diagram: Romakasiddhānta. 35. —Saurasiddhānta. 36. Colour of eclipses. 37. Conditions for non-prediction of eclipses. 38. —Inscriptional references: Lunar eclipses. 38. Solar eclipses.

##### 17. Phases of the Moon ... 241

1. Periodical appearance of the Moon. 2. Moon's luminosity. 3. Conditions of Moon's visibility. 4. Preliminaries for computation. 5. Visibility corrections: Ākṣa, Āyana and the Third. 6. Rising and setting of the Moon. 7. Moon's shadow. 8. Computation of Moon's cusps. 9. Moon's cusps—diagram.

##### 18. Heliacal rising and setting of Planets and Stars ... 254

1. Heliacal rising and setting of planets. 2. Days of rising and setting. 3. Planetary elongation for rising and setting. 4. Visibility corrections. 5. Computation of rising and setting. 6. Jupiter's rising and setting. 7. Venus: Rising and setting. 8. Rising and setting of a star. 9. Canopus: Rising.

##### 19. Conjunction of Planets ... 264

1. Types of planetary conjunctions. 2. Conjunction: Principle of computation. 3. Computation of conjunction.

##### 20. Conjunction of Stars and Planets ... 271

1. Conjunction of stars and planets. 2. Principle of planet-star conjunction. 3. Occultation of stars by planets. 4. Occultation of Rohiṇī by planets. 5. Occultation of stars by the Moon. 6. Time of star-planet conjunction.

#### V. INNOVATIVE TRENDS

##### 21. Novel Innovations ... 274

1. True longitude computation on the sphere of the zodiac. 2. Computation of True Moon. 3. Simplified astronomical procedures.

#### IV. OCCULTATION

##### 16. Eclipses ... 196

1. Cause stated in the Ṛgveda. 2. Cause of the lunar eclipse. 3. Lunar eclipse: Principle of computation. 4. Lunar eclipse computation: Vāsiṣṭha and Pauliṣa. 5. —Saurasiddhānta. 6. —Āryabhaṭīya. 7. —Āryabhaṭa's Midnight system. 8. —Emendation by Brahmagupta. 9. —Bhāskara I. 10. —Lalla. 11. —Bhāskara II. 12. —Karaṇaratna. 13. —Śrīpati. 14. —Vākyakaraṇa. 15. —Grahalāghava. 16. Lunar eclipse diagram: Vāsiṣṭha Pauliṣa. 17. —Āryabhaṭa's Midnight system. 18. —Bhāskara I. 19. —Lalla. 20. —Sūryasiddhānta. 21. —Bhāskara II. 22. —Karaṇaratna. 23. Solar eclipse: Computation: Pauliṣa. 24. —Romakasiddhānta. 25. —Saurasiddhānta. 26. —Āryabhaṭa's Midnight system. 27. —Bhāskara I. 28. —Lalla. 29. —Mahāsiddhānta. 30. —Bhāskara II. 31. —Karaṇaratna. 32. —Śrīpati. 33. —Grahalāghava. 34. —Solar eclipse diagram: Romakasiddhānta. 35. —Saurasiddhānta. 36. Colour of eclipses. 37. Conditions for non-prediction of eclipses. 38. —Inscriptional references: Lunar eclipses. 38. Solar eclipses.

##### 17. Phases of the Moon ... 241

1. Periodical appearance of the Moon. 2. Moon's luminosity. 3. Conditions of Moon's visibility. 4. Preliminaries for computation. 5. Visibility corrections: Ākṣa, Āyana and the Third. 6. Rising and setting of the Moon. 7. Moon's shadow. 8. Computation of Moon's cusps. 9. Moon's cusps—diagram.

##### 18. Heliacal rising and setting of Planets and Stars ... 254

1. Heliacal rising and setting of planets. 2. Days of rising and setting. 3. Planetary elongation for rising and setting. 4. Visibility corrections. 5. Computation of rising and setting. 6. Jupiter's rising and setting. 7. Venus: Rising and setting. 8. Rising and setting of a star. 9. Canopus: Rising.

##### 19. Conjunction of Planets ... 264

1. Types of planetary conjunctions. 2. Conjunction: Principle of computation. 3. Computation of conjunction.

##### 20. Conjunction of Stars and Planets ... 271

1. Conjunction of stars and planets. 2. Principle of planet-star conjunction. 3. Occultation of stars by planets. 4. Occultation of Rohiṇī by planets. 5. Occultation of stars by the Moon. 6. Time of star-planet conjunction.

#### V. INNOVATIVE TRENDS

##### 21. Novel Innovations ... 274

1. True longitude computation on the sphere of the zodiac. 2. Computation of True Moon. 3. Simplified astronomical procedures.

#### IV. OCCULTATION

##### 16. Eclipses ... 196

1. Cause stated in the Ṛgveda. 2. Cause of the lunar eclipse. 3. Lunar eclipse: Principle of computation. 4. Lunar eclipse computation: Vāsiṣṭha and Pauliṣa. 5. —Saurasiddhānta. 6. —Āryabhaṭīya. 7. —Āryabhaṭa's Midnight system. 8. —Emendation by Brahmagupta. 9. —Bhāskara I. 10. —Lalla. 11. —Bhāskara II. 12. —Karaṇaratna. 13. —Śrīpati. 14. —Vākyakaraṇa. 15. —Grahalāghava. 16. Lunar eclipse diagram: Vāsiṣṭha Pauliṣa. 17. —Āryabhaṭa's Midnight system. 18. —Bhāskara I. 19. —Lalla. 20. —Sūryasiddhānta. 21. —Bhāskara II. 22. —Karaṇaratna. 23. Solar eclipse: Computation: Pauliṣa. 24. —Romakasiddhānta. 25. —Saurasiddhānta. 26. —Āryabhaṭa's Midnight system. 27. —Bhāskara I. 28. —Lalla. 29. —Mahāsiddhānta. 30. —Bhāskara II. 31. —Karaṇaratna. 32. —Śrīpati. 33. —Grahalāghava. 34. —Solar eclipse diagram: Romakasiddhānta. 35. —Saurasiddhānta. 36. Colour of eclipses. 37. Conditions for non-prediction of eclipses. 38. —Inscriptional references: Lunar eclipses. 38. Solar eclipses.

##### 17. Phases of the Moon ... 241

1. Periodical appearance of the Moon. 2. Moon's luminosity. 3. Conditions of Moon's visibility. 4. Preliminaries for computation. 5. Visibility corrections: Ākṣa, Āyana and the Third. 6. Rising and setting of the Moon. 7. Moon's shadow. 8. Computation of Moon's cusps. 9. Moon's cusps—diagram.

##### 18. Heliacal rising and setting of Planets and Stars ... 254

1. Heliacal rising and setting of planets. 2. Days of rising and setting. 3. Planetary elongation for rising and setting. 4. Visibility corrections. 5. Computation of rising and setting. 6. Jupiter's rising and setting. 7. Venus: Rising and setting. 8. Rising and setting of a star. 9. Canopus: Rising.

##### 19. Conjunction of Planets ... 264

1. Types of planetary conjunctions. 2. Conjunction: Principle of computation. 3. Computation of conjunction.

##### 20. Conjunction of Stars and Planets ... 271

1. Conjunction of stars and planets. 2. Principle of planet-star conjunction. 3. Occultation of stars by planets. 4. Occultation of Rohiṇī by planets. 5. Occultation of stars by the Moon. 6. Time of star-planet conjunction.

#### V. INNOVATIVE TRENDS

##### 21. Novel Innovations ... 274

1. True longitude computation on the sphere of the zodiac. 2. Computation of True Moon. 3. Simplified astronomical procedures.

#### IV. OCCULTATION

##### 16. Eclipses ... 196

1. Cause stated in the Ṛgveda. 2. Cause of the lunar eclipse. 3. Lunar eclipse: Principle of computation. 4. Lunar eclipse computation: Vāsiṣṭha and Pauliṣa. 5. —Saurasiddhānta. 6. —Āryabhaṭīya. 7. —Āryabhaṭa's Midnight system. 8. —Emendation by Brahmagupta. 9. —Bhāskara I. 10. —Lalla. 11. —Bhāskara II. 12. —Karaṇaratna. 13. —Śrīpati. 14. —Vākyakaraṇa. 15. —Grahalāghava. 16. Lunar eclipse diagram: Vāsiṣṭha Pauliṣa. 17. —Āryabhaṭa's Midnight system. 18. —Bhāskara I. 19. —Lalla. 20. —Sūryasiddhānta. 21. —Bhāskara II. 22. —Karaṇaratna. 23. Solar eclipse: Computation: Pauliṣa. 24. —Romakasiddhānta. 25. —Saurasiddhānta. 26. —Āryabhaṭa's Midnight system. 27. —Bhāskara I. 28. —Lalla. 29. —Mahāsiddhānta. 30. —Bhāskara II. 31. —Karaṇaratna. 32. —Śrīpati. 33. —Grahalāghava. 34. —Solar eclipse diagram: Romakasiddhānta. 35. —Saurasiddhānta. 36. Colour of eclipses. 37. Conditions for non-prediction of eclipses. 38. —Inscriptional references: Lunar eclipses. 38. Solar eclipses.

##### 17. Phases of the Moon ... 241

1. Periodical appearance of the Moon. 2. Moon's luminosity. 3. Conditions of Moon's visibility. 4. Preliminaries for computation. 5. Visibility corrections: Ākṣa, Āyana and the Third. 6. Rising and setting of the Moon. 7. Moon's shadow. 8. Computation of Moon's cusps. 9. Moon's cusps—diagram.

##### 18. Heliacal rising and setting of Planets and Stars ... 254

1. Heliacal rising and setting of planets. 2. Days of rising and setting. 3. Planetary elongation for rising and setting. 4. Visibility corrections. 5. Computation of rising and setting. 6. Jupiter's rising and setting. 7. Venus: Rising and setting. 8. Rising and setting of a star. 9. Canopus: Rising.

##### 19. Conjunction of Planets ... 264

1. Types of planetary conjunctions. 2. Conjunction: Principle of computation. 3. Computation of conjunction.

##### 20. Conjunction of Stars and Planets ... 271

1. Conjunction of stars and planets. 2. Principle of planet-star conjunction. 3. Occultation of stars by planets. 4. Occultation of Rohiṇī by planets. 5. Occultation of stars by the Moon. 6. Time of star-planet conjunction.

#### V. INNOVATIVE TRENDS

##### 21. Novel Innovations ... 274

1. True longitude computation on the sphere of the zodiac. 2. Computation of True Moon. 3. Simplified astronomical procedures.

#### IV. OCCULTATION

##### 16. Eclipses ... 196

1. Cause stated in the Ṛgveda. 2. Cause of the lunar eclipse. 3. Lunar eclipse: Principle of computation. 4. Lunar eclipse computation: Vāsiṣṭha and Pauliṣa. 5. —Saurasiddhānta. 6. —Āryabhaṭīya. 7. —Āryabhaṭa's Midnight system. 8. —Emendation by Brahmagupta. 9. —Bhāskara I. 10. —Lalla. 11. —Bhāskara II. 12. —Karaṇaratna. 13. —Śrīpati. 14. —Vākyakaraṇa. 15. —Grahalāghava. 16. Lunar eclipse diagram: Vāsiṣṭha Pauliṣa. 17. —Āryabhaṭa's Midnight system. 18. —Bhāskara I. 19. —Lalla. 20. —Sūryasiddhānta. 21. —Bhāskara II. 22. —Karaṇaratna. 23. Solar eclipse: Computation: Pauliṣa. 24. —Romakasiddhānta. 25. —Saurasiddhānta. 26. —Āryabhaṭa's Midnight system. 27. —Bhāskara I. 28. —Lalla. 29. —Mahāsiddhānta. 30. —Bhāskara II. 31. —Karaṇaratna. 32. —Śrīpati. 33. —Grahalāghava. 34. —Solar eclipse diagram: Romakasiddhānta. 35. —Saurasiddhānta. 36. Colour of eclipses. 37. Conditions for non-prediction of eclipses. 38. —Inscriptional references: Lunar eclipses. 38. Solar eclipses.

##### 17. Phases of the Moon ... 241

1. Periodical appearance of the Moon. 2. Moon's luminosity. 3. Conditions of Moon's visibility. 4. Preliminaries for computation. 5. Visibility corrections: Ākṣa, Āyana and the Third. 6. Rising and setting of the Moon. 7. Moon's shadow. 8. Computation of Moon's cusps. 9. Moon's cusps—diagram.

##### 18. Heliacal rising and setting of Planets and Stars ... 254

1. Heliacal rising and setting of planets. 2. Days of rising and setting. 3. Planetary elongation for rising and setting. 4. Visibility corrections. 5. Computation of rising and setting. 6. Jupiter's rising and setting. 7. Venus: Rising and setting. 8. Rising and setting of a star. 9. Canopus: Rising.

##### 19. Conjunction of Planets ... 264

1. Types of planetary conjunctions. 2. Conjunction: Principle of computation. 3. Computation of conjunction.

##### 20. Conjunction of Stars and Planets ... 271

1. Conjunction of stars and planets. 2. Principle of planet-star conjunction. 3. Occultation of stars by planets. 4. Occultation of Rohiṇī by planets. 5. Occultation of stars by the Moon. 6. Time of star-planet conjunction.

#### V. INNOVATIVE TRENDS

##### 21. Novel Innovations ... 274

1. True longitude computation on the sphere of the zodiac. 2. Computation of True Moon. 3. Simplified astronomical procedures.

#### IV. OCCULTATION

##### 16. Eclipses ... 196

1. Cause stated in the Ṛgveda. 2. Cause of the lunar eclipse. 3. Lunar eclipse: Principle of computation. 4. Lunar eclipse computation: Vāsiṣṭha and Pauliṣa. 5. —Saurasiddhānta. 6. —Āryabhaṭīya. 7. —Āryabhaṭa's Midnight system. 8. —Emendation by Brahmagupta. 9. —Bhāskara I. 10. —Lalla. 11. —Bhāskara II. 12. —Karaṇaratna. 13. —Śrīpati. 14. —Vākyakaraṇa. 15. —Grahalāghava. 16. Lunar eclipse diagram: Vāsiṣṭha Pauliṣa. 17. —Āryabhaṭa's Midnight system. 18. —Bhāskara I. 19. —Lalla. 20. —Sūryasiddhānta. 21. —Bhāskara II. 22. —Karaṇaratna. 23. Solar eclipse: Computation: Pauliṣa. 24. —Romakasiddhānta. 25. —Saurasiddhānta. 26. —Āryabhaṭa's Midnight system. 27. —Bhāskara I. 28. —Lalla. 29. —Mahāsiddhānta. 30. —Bhāskara II. 31. —Karaṇaratna. 32. —Śrīpati. 33. —Grahalāghava. 34. —Solar eclipse diagram: Romakasiddhānta. 35. —Saurasiddhānta. 36. Colour of eclipses. 37. Conditions for non-prediction of eclipses. 38. —Inscriptional references: Lunar eclipses. 38. Solar eclipses.

##### 17. Phases of the Moon ... 241

1. Periodical appearance of the Moon. 2. Moon's luminosity. 3. Conditions of Moon's visibility. 4. Preliminaries for computation. 5. Visibility corrections: Ākṣa, Āyana and the Third. 6. Rising and setting of the Moon. 7. Moon's shadow. 8. Computation of Moon's cusps. 9. Moon's cusps—diagram.

##### 18. Heliacal rising and setting of Planets and Stars ... 254

1. Heliacal rising and setting of planets. 2. Days of rising and setting. 3. Planetary elongation for rising and setting. 4. Visibility corrections. 5. Computation of rising and setting. 6. Jupiter's rising and setting. 7. Venus: Rising and setting. 8. Rising and setting of a star. 9. Canopus: Rising.

##### 19. Conjunction of Planets ... 264

1. Types of planetary conjunctions. 2. Conjunction: Principle of computation. 3. Computation of conjunction.

##### 20. Conjunction of Stars and Planets ... 271

1. Conjunction of stars and planets. 2. Principle of planet-star conjunction. 3. Occultation of stars by planets. 4. Occultation of Rohiṇī by planets. 5. Occultation of stars by the Moon. 6. Time of star-planet conjunction.

#### V. INNOVATIVE TRENDS

##### 21. Novel Innovations ... 274

1. True longitude computation on the sphere of the zodiac. 2. Computation of True Moon. 3. Simplified astronomical procedures.

#### IV. OCCULTATION

##### 16. Eclipses ... 196

1. Cause stated in the Ṛgveda. 2. Cause of the lunar eclipse. 3. Lunar eclipse: Principle of computation. 4. Lunar eclipse computation: Vāsiṣṭha and Pauliṣa. 5. —Saurasiddhānta. 6. —Āryabhaṭīya. 7. —Āryabhaṭa's Midnight system. 8. —Emendation by Brahmagupta. 9. —Bhāskara I. 10. —Lalla. 11. —Bhāskara II. 12. —Karaṇaratna. 13. —Śrīpati. 14. —Vākyakaraṇa. 15. —Grahalāghava. 16. Lunar eclipse diagram: Vāsiṣṭha Pauliṣa. 17. —Āryabhaṭa's Midnight system. 18. —Bhāskara I. 19. —Lalla. 20. —Sūryasiddhānta. 21. —Bhāskara II. 22. —Karaṇaratna. 23. Solar eclipse: Computation: Pauliṣa. 24. —Romakasiddhānta. 25. —Saurasiddhānta. 26. —Āryabhaṭa's Midnight system. 27. —Bhāskara I. 28. —Lalla. 29. —Mahāsiddhānta. 30. —Bhāskara II. 31. —Karaṇaratna. 32. —Śrīpati. 33. —Grahalāghava. 34. —Solar eclipse diagram: Romakasiddhānta. 35. —Saurasiddhānta. 36. Colour of eclipses. 37. Conditions for non-prediction of eclipses. 38. —Inscriptional references: Lunar eclipses. 38. Solar eclipses.

##### 17. Phases of the Moon ... 241

1. Periodical appearance of the Moon. 2. Moon's luminosity. 3. Conditions of Moon's visibility. 4. Preliminaries for computation. 5. Visibility corrections: Ākṣa, Āyana and the Third. 6. Rising and setting of the Moon. 7. Moon's shadow. 8. Computation of Moon's cusps. 9. Moon's cusps—diagram.

##### 18. Heliacal rising and setting of Planets and Stars ... 254

1. Heliacal rising and setting of planets. 2. Days of rising and setting. 3. Planetary elongation for rising and setting. 4. Visibility corrections. 5. Computation of rising and setting. 6. Jupiter's rising and setting. 7. Venus: Rising and setting. 8. Rising and setting of a star. 9. Canopus: Rising.

##### 19. Conjunction of Planets ... 264

1. Types of planetary conjunctions. 2. Conjunction: Principle of computation. 3. Computation of conjunction.

##### 20. Conjunction of Stars and Planets ... 271

1. Conjunction of stars and planets. 2. Principle of planet-star conjunction. 3. Occultation of stars by planets. 4. Occultation of Rohiṇī by planets. 5. Occultation of stars by the Moon. 6. Time of star-planet conjunction.

#### V. INNOVATIVE TRENDS

##### 21. Novel Innovations ... 274

1. True longitude computation on the sphere of the zodiac. 2. Computation of True Moon. 3. Simplified astronomical procedures.



#### IV. OCCULTATION

##### 16. Eclipses ... 196

1. Cause stated in the Ṛgveda. 2. Cause of the lunar eclipse. 3. Lunar eclipse: Principle of computation. 4. Lunar eclipse computation: Vāsiṣṭha and Pauliṣa. 5. —Saurasiddhānta. 6. —Āryabhaṭīya. 7. —Āryabhaṭa's Midnight system. 8. —Emendation by Brahmagupta. 9. —Bhāskara I. 10. —Lalla. 11. —Bhāskara II. 12. —Karaṇaratna. 13. —Śrīpati. 14. —Vākyakaraṇa. 15. —Grahalāghava. 16. Lunar eclipse diagram: Vāsiṣṭha Pauliṣa. 17. —Āryabhaṭa's Midnight system. 18. —Bhāskara I. 19. —Lalla. 20. —Sūryasiddhānta. 21. —Bhāskara II. 22. —Karaṇaratna. 23. Solar eclipse: Computation: Pauliṣa. 24. —Romakasiddhānta. 25. —Saurasiddhānta. 26. —Āryabhaṭa's Midnight system. 27. —Bhāskara I. 28. —Lalla. 29. —Mahāsiddhānta. 30. —Bhāskara II. 31. —Karaṇaratna. 32. —Śrīpati. 33. —Grahalāghava. 34. —Solar eclipse diagram: Romakasiddhānta. 35. —Saurasiddhānta. 36. Colour of eclipses. 37. Conditions for non-prediction of eclipses. 38. —Inscriptional references: Lunar eclipses. 38. Solar eclipses.

##### 17. Phases of the Moon ... 241

1. Periodical appearance of the Moon. 2. Moon's luminosity. 3. Conditions of Moon's visibility. 4. Preliminaries for computation. 5. Visibility corrections: Ākṣa, Āyana and the Third. 6. Rising and setting of the Moon. 7. Moon's shadow. 8. Computation of Moon's cusps. 9. Moon's cusps—diagram.

##### 18. Heliacal rising and setting of Planets and Stars ... 254

1. Heliacal rising and setting of planets. 2. Days of rising and setting. 3. Planetary elongation for rising and setting. 4. Visibility corrections. 5. Computation of rising and setting. 6. Jupiter's rising and setting. 7. Venus: Rising and setting. 8. Rising and setting of a star. 9. Canopus: Rising.

##### 19. Conjunction of Planets ... 264

1. Types of planetary conjunctions. 2. Conjunction: Principle of computation. 3. Computation of conjunction.

##### 20. Conjunction of Stars and Planets ... 271

1. Conjunction of stars and planets. 2. Principle of planet-star conjunction. 3. Occultation of stars by planets. 4. Occultation of Rohiṇī by planets. 5. Occultation of stars by the Moon. 6. Time of star-planet conjunction.

#### V. INNOVATIVE TRENDS

##### 21. Novel Innovations ... 274

1. True longitude computation on the sphere of the zodiac. 2. Computation of True Moon. 3. Simplified astronomical procedures.

#### IV. OCCULTATION

##### 16. Eclipses ... 196

1. Cause stated in the Ṛgveda. 2. Cause of the lunar eclipse. 3. Lunar eclipse: Principle of computation. 4. Lunar eclipse computation: Vāsiṣṭha and Pauliṣa. 5. —Saurasiddhānta. 6. —Āryabhaṭīya. 7. —Āryabhaṭa's Midnight system. 8. —Emendation by Brahmagupta. 9. —Bhāskara I. 10. —Lalla. 11. —Bhāskara II. 12. —Karaṇaratna. 13. —Śrīpati. 14. —Vākyakaraṇa. 15. —Grahalāghava. 16. Lunar eclipse diagram: Vāsiṣṭha Pauliṣa. 17. —Āryabhaṭa's Midnight system. 18. —Bhāskara I. 19. —Lalla. 20. —Sūryasiddhānta. 21. —Bhāskara II. 22. —Karaṇaratna. 23. Solar eclipse: Computation: Pauliṣa. 24. —Romakasiddhānta. 25. —Saurasiddhānta. 26. —Āryabhaṭa's Midnight system. 27. —Bhāskara I. 28. —Lalla. 29. —Mahāsiddhānta. 30. —Bhāskara II. 31. —Karaṇaratna. 32. —Śrīpati. 33. —Grahalāghava. 34. —Solar eclipse diagram: Romakasiddhānta. 35. —Saurasiddhānta. 36. Colour of eclipses. 37. Conditions for non-prediction of eclipses. 38. —Inscriptional references: Lunar eclipses. 38. Solar eclipses.

##### 17. Phases of the Moon ... 241

1. Periodical appearance of the Moon. 2. Moon's luminosity. 3. Conditions of Moon's visibility. 4. Preliminaries for computation. 5. Visibility corrections: Ākṣa, Āyana and the Third. 6. Rising and setting of the Moon. 7. Moon's shadow. 8. Computation of Moon's cusps. 9. Moon's cusps—diagram.

##### 18. Heliacal rising and setting of Planets and Stars ... 254

1. Heliacal rising and setting of planets. 2. Days of rising and setting. 3. Planetary elongation for rising and setting. 4. Visibility corrections. 5. Computation of rising and setting. 6. Jupiter's rising and setting. 7. Venus: Rising and setting. 8. Rising and setting of a star. 9. Canopus: Rising.

##### 19. Conjunction of Planets ... 264

1. Types of planetary conjunctions. 2. Conjunction: Principle of computation. 3. Computation of conjunction.

##### 20. Conjunction of Stars and Planets ... 271

1. Conjunction of stars and planets. 2. Principle of planet-star conjunction. 3. Occultation of stars by planets. 4. Occultation of Rohiṇī by planets. 5. Occultation of stars by the Moon. 6. Time of star-planet conjunction.

#### V. INNOVATIVE TRENDS

##### 21. Novel Innovations ... 274

1. True longitude computation on the sphere of the zodiac. 2. Computation of True Moon. 3. Simplified astronomical procedures.

#### IV. OCCULTATION

##### 16. Eclipses ... 196

1. Cause stated in the Ṛgveda. 2. Cause of the lunar eclipse. 3. Lunar eclipse: Principle of computation. 4. Lunar eclipse computation: Vāsiṣṭha and Pauliṣa. 5. —Saurasiddhānta. 6. —Āryabhaṭīya. 7. —Āryabhaṭa's Midnight system. 8. —Emendation by Brahmagupta. 9. —Bhāskara I. 10. —Lalla. 11. —Bhāskara II. 12. —Karaṇaratna. 13. —Śrīpati. 14. —Vākyakaraṇa. 15. —Grahalāghava. 16. Lunar eclipse diagram: Vāsiṣṭha Pauliṣa. 17. —Āryabhaṭa's Midnight system. 18. —Bhāskara I. 19. —Lalla. 20. —Sūryasiddhānta. 21. —Bhāskara II. 22. —Karaṇaratna. 23. Solar eclipse: Computation: Pauliṣa. 24. —Romakasiddhānta. 25. —Saurasiddhānta. 26. —Āryabhaṭa's Midnight system. 27. —Bhāskara I. 28. —Lalla. 29. —Mahāsiddhānta. 30. —Bhāskara II. 31. —Karaṇaratna. 32. —Śrīpati. 33. —Grahalāghava. 34. —Solar eclipse diagram: Romakasiddhānta. 35. —Saurasiddhānta. 36. Colour of eclipses. 37. Conditions for non-prediction of eclipses. 38. —Inscriptional references: Lunar eclipses. 38. Solar eclipses.

##### 17. Phases of the Moon ... 241

1. Periodical appearance of the Moon. 2. Moon's luminosity. 3. Conditions of Moon's visibility. 4. Preliminaries for computation. 5. Visibility corrections: Ākṣa, Āyana and the Third. 6. Rising and setting of the Moon. 7. Moon's shadow. 8. Computation of Moon's cusps. 9. Moon's cusps—diagram.

##### 18. Heliacal rising and setting of Planets and Stars ... 254

1. Heliacal rising and setting of planets. 2. Days of rising and setting. 3. Planetary elongation for rising and setting. 4. Visibility corrections. 5. Computation of rising and setting. 6. Jupiter's rising and setting. 7. Venus: Rising and setting. 8. Rising and setting of a star. 9. Canopus: Rising.

##### 19. Conjunction of Planets ... 264

1. Types of planetary conjunctions. 2. Conjunction: Principle of computation. 3. Computation of conjunction.

##### 20. Conjunction of Stars and Planets ... 271

1. Conjunction of stars and planets. 2. Principle of planet-star conjunction. 3. Occultation of stars by planets. 4. Occultation of Rohiṇī by planets. 5. Occultation of stars by the Moon. 6. Time of star-planet conjunction.

#### V. INNOVATIVE TRENDS

##### 21. Novel Innovations ... 274

1. True longitude computation on the sphere of the zodiac. 2. Computation of True Moon. 3. Simplified astronomical procedures.

#### IV. OCCULTATION

##### 16. Eclipses ... 196

1. Cause stated in the Ṛgveda. 2. Cause of the lunar eclipse. 3. Lunar eclipse: Principle of computation. 4. Lunar eclipse computation: Vāsiṣṭha and Pauliṣa. 5. —Saurasiddhānta. 6. —Āryabhaṭīya. 7. —Āryabhaṭa's Midnight system. 8. —Emendation by Brahmagupta. 9. —Bhāskara I. 10. —Lalla. 11. —Bhāskara II. 12. —Karaṇaratna. 13. —Śrīpati. 14. —Vākyakaraṇa. 15. —Grahalāghava. 16. Lunar eclipse diagram: Vāsiṣṭha Pauliṣa. 17. —Āryabhaṭa's Midnight system. 18. —Bhāskara I. 19. —Lalla. 20. —Sūryasiddhānta. 21. —Bhāskara II. 22. —Karaṇaratna. 23. Solar eclipse: Computation: Pauliṣa. 24. —Romakasiddhānta. 25. —Saurasiddhānta. 26. —Āryabhaṭa's Midnight system. 27. —Bhāskara I. 28. —Lalla. 29. —Mahāsiddhānta. 30. —Bhāskara II. 31. —Karaṇaratna. 32. —Śrīpati. 33. —Grahalāghava. 34. —Solar eclipse diagram: Romakasiddhānta. 35. —Saurasiddhānta. 36. Colour of eclipses. 37. Conditions for non-prediction of eclipses. 38. —Inscriptional references: Lunar eclipses. 38. Solar eclipses.

##### 17. Phases of the Moon ... 241

1. Periodical appearance of the Moon. 2. Moon's luminosity. 3. Conditions of Moon's visibility. 4. Preliminaries for computation. 5. Visibility corrections: Ākṣa, Āyana and the Third. 6. Rising and setting of the Moon. 7. Moon's shadow. 8. Computation of Moon's cusps. 9. Moon's cusps—diagram.

##### 18. Heliacal rising and setting of Planets and Stars ... 254

1. Heliacal rising and setting of planets. 2. Days of rising and setting. 3. Planetary elongation for rising and setting. 4. Visibility corrections. 5. Computation of rising and setting. 6. Jupiter's rising and setting. 7. Venus: Rising and setting. 8. Rising and setting of a star. 9. Canopus: Rising.

##### 19. Conjunction of Planets ... 264

1. Types of planetary conjunctions. 2. Conjunction: Principle of computation. 3. Computation of conjunction.

##### 20. Conjunction of Stars and Planets ... 271

1. Conjunction of stars and planets. 2. Principle of planet-star conjunction. 3. Occultation of stars by planets. 4. Occultation of Rohiṇī by planets. 5. Occultation of stars by the Moon. 6. Time of star-planet conjunction.

#### V. INNOVATIVE TRENDS

##### 21. Novel Innovations ... 274

1. True longitude computation on the sphere of the zodiac. 2. Computation of True Moon. 3. Simplified astronomical procedures.

#### IV. OCCULTATION

##### 16. Eclipses ... 196

1. Cause stated in the Ṛgveda. 2. Cause of the lunar eclipse. 3. Lunar eclipse: Principle of computation. 4. Lunar eclipse computation: Vāsiṣṭha and Pauliṣa. 5. —Saurasiddhānta. 6. —Āryabhaṭīya. 7. —Āryabhaṭa's Midnight system. 8. —Emendation by Brahmagupta. 9. —Bhāskara I. 10. —Lalla. 11. —Bhāskara II. 12. —Karaṇaratna. 13. —Śrīpati. 14. —Vākyakaraṇa. 15. —Grahalāghava. 16. Lunar eclipse diagram: Vāsiṣṭha Pauliṣa. 17. —Āryabhaṭa's Midnight system. 18. —Bhāskara I. 19. —Lalla. 20. —Sūryasiddhānta. 21. —Bhāskara II. 22. —Karaṇaratna. 23. Solar eclipse: Computation: Pauliṣa. 24. —Romakasiddhānta. 25. —Saurasiddhānta. 26. —Āryabhaṭa's Midnight system. 27. —Bhāskara I. 28. —Lalla. 29. —Mahāsiddhānta. 30. —Bhāskara II. 31. —Karaṇaratna. 32. —Śrīpati. 33. —Grahalāghava. 34. —Solar eclipse diagram: Romakasiddhānta. 35. —Saurasiddhānta. 36. Colour of eclipses. 37. Conditions for non-prediction of eclipses. 38. —Inscriptional references: Lunar eclipses. 38. Solar eclipses.

##### 17. Phases of the Moon ... 241

1. Periodical appearance of the Moon. 2. Moon's luminosity. 3. Conditions of Moon's visibility. 4. Preliminaries for computation. 5. Visibility corrections: Ākṣa, Āyana and the Third. 6. Rising and setting of the Moon. 7. Moon's shadow. 8. Computation of Moon's cusps. 9. Moon's cusps—diagram.

##### 18. Heliacal rising and setting of Planets and Stars ... 254

1. Heliacal rising and setting of planets. 2. Days of rising and setting. 3. Planetary elongation for rising and setting. 4. Visibility corrections. 5. Computation of rising and setting. 6. Jupiter's rising and setting. 7. Venus: Rising and setting. 8. Rising and setting of a star. 9. Canopus: Rising.

##### 19. Conjunction of Planets ... 264

1. Types of planetary conjunctions. 2. Conjunction: Principle of computation. 3. Computation of conjunction.

##### 20. Conjunction of Stars and Planets ... 271

1. Conjunction of stars and planets. 2. Principle of planet-star conjunction. 3. Occultation of stars by planets. 4. Occultation of Rohiṇī by planets. 5. Occultation of stars by the Moon. 6. Time of star-planet conjunction.

#### V. INNOVATIVE TRENDS

##### 21. Novel Innovations ... 274

1. True longitude computation on the sphere of the zodiac. 2. Computation of True Moon. 3. Simplified astronomical procedures.

#### IV. OCCULTATION

##### 16. Eclipses ... 196

1. Cause stated in the Ṛgveda. 2. Cause of the lunar eclipse. 3. Lunar eclipse: Principle of computation. 4. Lunar eclipse computation: Vāsiṣṭha and Pauliṣa. 5. —Saurasiddhānta. 6. —Āryabhaṭīya. 7. —Āryabhaṭa's Midnight system. 8. —Emendation by Brahmagupta. 9. —Bhāskara I. 10. —Lalla. 11. —Bhāskara II. 12. —Karaṇaratna. 13. —Śrīpati. 14. —Vākyakaraṇa. 15. —Grahalāghava. 16. Lunar eclipse diagram: Vāsiṣṭha Pauliṣa. 17. —Āryabhaṭa's Midnight system. 18. —Bhāskara I. 19. —Lalla. 20. —Sūryasiddhānta. 21. —Bhāskara II. 22. —Karaṇaratna. 23. Solar eclipse: Computation: Pauliṣa. 24. —Romakasiddhānta. 25. —Saurasiddhānta. 26. —Āryabhaṭa's Midnight system. 27. —Bhāskara I. 28. —Lalla. 29. —Mahāsiddhānta. 30. —Bhāskara II. 31. —Karaṇaratna. 32. —Śrīpati. 33. —Grahalāghava. 34. —Solar eclipse diagram: Romakasiddhānta. 35. —Saurasiddhānta. 36. Colour of eclipses. 37. Conditions for non-prediction of eclipses. 38. —Inscriptional references: Lunar eclipses. 38. Solar eclipses.

##### 17. Phases of the Moon ... 241

1. Periodical appearance of the Moon. 2. Moon's luminosity. 3. Conditions of Moon's visibility. 4. Preliminaries for computation. 5. Visibility corrections: Ākṣa, Āyana and the Third. 6. Rising and setting of the Moon. 7. Moon's shadow. 8. Computation of Moon's cusps. 9. Moon's cusps—diagram.

##### 18. Heliacal rising and setting of Planets and Stars ... 254

1. Heliacal rising and setting of planets. 2. Days of rising and setting. 3. Planetary elongation for rising and setting. 4. Visibility corrections. 5. Computation of rising and setting. 6. Jupiter's rising and setting. 7. Venus: Rising and setting. 8. Rising and setting of a star. 9. Canopus: Rising.

##### 19. Conjunction of Planets ... 264

1. Types of planetary conjunctions. 2. Conjunction: Principle of computation. 3. Computation of conjunction.

##### 20. Conjunction of Stars and Planets ... 271

1. Conjunction of stars and planets. 2. Principle of planet-star conjunction. 3. Occultation of stars by planets. 4. Occultation of Rohiṇī by planets. 5. Occultation of stars by the Moon. 6. Time of star-planet conjunction.

#### V. INNOVATIVE TRENDS

##### 21. Novel Innovations ... 274

1. True longitude computation on the sphere of the zodiac. 2. Computation of True Moon. 3. Simplified astronomical procedures.

#### IV. OCCULTATION

##### 16. Eclipses ... 196

1. Cause stated in the Ṛgveda. 2. Cause of the lunar eclipse. 3. Lunar eclipse: Principle of computation. 4. Lunar eclipse computation: Vāsiṣṭha and Pauliṣa. 5. —Saurasiddhānta. 6. —Āryabhaṭīya. 7. —Āryabhaṭa's Midnight system. 8. —Emendation by Brahmagupta. 9. —Bhāskara I. 10. —Lalla. 11. —Bhāskara II. 12. —Karaṇaratna. 13. —Śrīpati. 14. —Vākyakaraṇa. 15. —Grahalāghava. 16. Lunar eclipse diagram: Vāsiṣṭha Pauliṣa. 17. —Āryabhaṭa's Midnight system. 18. —Bhāskara I. 19. —Lalla. 20. —Sūryasiddhānta. 21. —Bhāskara II. 22. —Karaṇaratna. 23. Solar eclipse: Computation: Pauliṣa. 24. —Romakasiddhānta. 25. —Saurasiddhānta. 26. —Āryabhaṭa's Midnight system. 27. —Bhāskara I. 28. —Lalla. 29. —Mahāsiddhānta. 30. —Bhāskara II. 31. —Karaṇaratna. 32. —Śrīpati. 33. —Grahalāghava. 34. —Solar eclipse diagram: Romakasiddhānta. 35. —Saurasiddhānta. 36. Colour of eclipses. 37. Conditions for non-prediction of eclipses. 38. —Inscriptional references: Lunar eclipses. 38. Solar eclipses.

##### 17. Phases of the Moon ... 241

1. Periodical appearance of the Moon. 2. Moon's luminosity. 3. Conditions of Moon's visibility. 4. Preliminaries for computation. 5. Visibility corrections: Ākṣa, Āyana and the Third. 6. Rising and setting of the Moon. 7. Moon's shadow. 8. Computation of Moon's cusps. 9. Moon's cusps—diagram.

##### 18. Heliacal rising and setting of Planets and Stars ... 254

1. Heliacal rising and setting of planets. 2. Days of rising and setting. 3. Planetary elongation for rising and setting. 4. Visibility corrections. 5. Computation of rising and setting. 6. Jupiter's rising and setting. 7. Venus: Rising and setting. 8. Rising and setting of a star. 9. Canopus: Rising.

##### 19. Conjunction of Planets ... 264

1. Types of planetary conjunctions. 2. Conjunction: Principle of computation. 3. Computation of conjunction.

##### 20. Conjunction of Stars and Planets ... 271

1. Conjunction of stars and planets. 2. Principle of planet-star conjunction. 3. Occultation of stars by planets. 4. Occultation of Rohiṇī by planets. 5. Occultation of stars by the Moon. 6. Time of star-planet conjunction.

#### V. INNOVATIVE TRENDS

##### 21. Novel Innovations ... 274

1. True longitude computation on the sphere of the zodiac. 2. Computation of True Moon. 3. Simplified astronomical procedures.

#### IV. OCCULTATION

##### 16. Eclipses ... 196

1. Cause stated in the Ṛgveda. 2. Cause of the lunar eclipse. 3. Lunar eclipse: Principle of computation. 4. Lunar eclipse computation: Vāsiṣṭha and Pauliṣa. 5. —Saurasiddhānta. 6. —Āryabhaṭīya. 7. —Āryabhaṭa's Midnight system. 8. —Emendation by Brahmagupta. 9. —Bhāskara I. 10. —Lalla. 11. —Bhāskara II. 12. —Karaṇaratna. 13. —Śrīpati. 14. —Vākyakaraṇa. 15. —Grahalāghava. 16. Lunar eclipse diagram: Vāsiṣṭha Pauliṣa. 17. —Āryabhaṭa's Midnight system. 18. —Bhāskara I. 19. —Lalla. 20. —Sūryasiddhānta. 21. —Bhāskara II. 22. —Karaṇaratna. 23. Solar eclipse: Computation: Pauliṣa. 24. —Romakasiddhānta. 25. —Saurasiddhānta. 26. —Āryabhaṭa's Midnight system. 27. —Bhāskara I. 28. —Lalla. 29. —Mahāsiddhānta. 30. —Bhāskara II. 31. —Karaṇaratna. 32. —Śrīpati. 33. —Grahalāghava. 34. —Solar eclipse diagram: Romakasiddhānta. 35. —Saurasiddhānta. 36. Colour of eclipses. 37. Conditions for non-prediction of eclipses. 38. —Inscriptional references: Lunar eclipses. 38. Solar eclipses.

##### 17. Phases of the Moon ... 241

1. Periodical appearance of the Moon. 2. Moon's luminosity. 3. Conditions of Moon's visibility. 4. Preliminaries for computation. 5. Visibility corrections: Ākṣa, Āyana and the Third. 6. Rising and setting of the Moon. 7. Moon's shadow. 8. Computation of Moon's cusps. 9. Moon's cusps—diagram.

##### 18. Heliacal rising and setting of Planets and Stars ... 254

1. Heliacal rising and setting of planets. 2. Days of rising and setting. 3. Planetary elongation for rising and setting. 4. Visibility corrections. 5. Computation of rising and setting. 6. Jupiter's rising and setting. 7. Venus: Rising and setting. 8. Rising and setting of a star. 9. Canopus: Rising.

##### 19. Conjunction of Planets ... 264

1. Types of planetary conjunctions. 2. Conjunction: Principle of computation. 3. Computation of conjunction.

##### 20. Conjunction of Stars and Planets ... 271

1. Conjunction of stars and planets. 2. Principle of planet-star conjunction. 3. Occultation of stars by planets. 4. Occultation of Rohiṇī by planets. 5. Occultation of stars by the Moon. 6. Time of star-planet conjunction.

#### V. INNOVATIVE TRENDS

##### 21. Novel Innovations ... 274

1. True longitude computation on the sphere of the zodiac. 2. Computation of True Moon. 3. Simplified astronomical procedures.



#### IV. OCCULTATION

##### 16. Eclipses ... 196

1. Cause stated in the Ṛgveda. 2. Cause of the lunar eclipse. 3. Lunar eclipse: Principle of computation. 4. Lunar eclipse computation: Vāsiṣṭha and Pauliṣa. 5. —Saurasiddhānta. 6. —Āryabhaṭīya. 7. —Āryabhaṭa's Midnight system. 8. —Emendation by Brahmagupta. 9. —Bhāskara I. 10. —Lalla. 11. —Bhāskara II. 12. —Karaṇaratna. 13. —Śrīpati. 14. —Vākyakaraṇa. 15. —Grahalāghava. 16. Lunar eclipse diagram: Vāsiṣṭha Pauliṣa. 17. —Āryabhaṭa's Midnight system. 18. —Bhāskara I. 19. —Lalla. 20. —Sūryasiddhānta. 21. —Bhāskara II. 22. —Karaṇaratna. 23. Solar eclipse: Computation: Pauliṣa. 24. —Romakasiddhānta. 25. —Saurasiddhānta. 26. —Āryabhaṭa's Midnight system. 27. —Bhāskara I. 28. —Lalla. 29. —Mahāsiddhānta. 30. —Bhāskara II. 31. —Karaṇaratna. 32. —Śrīpati. 33. —Grahalāghava. 34. —Solar eclipse diagram: Romakasiddhānta. 35. —Saurasiddhānta. 36. Colour of eclipses. 37. Conditions for non-prediction of eclipses. 38. —Inscriptional references: Lunar eclipses. 38. Solar eclipses.

##### 17. Phases of the Moon ... 241

1. Periodical appearance of the Moon. 2. Moon's luminosity. 3. Conditions of Moon's visibility. 4. Preliminaries for computation. 5. Visibility corrections: Ākṣa, Āyana and the Third. 6. Rising and setting of the Moon. 7. Moon's shadow. 8. Computation of Moon's cusps. 9. Moon's cusps—diagram.

##### 18. Heliacal rising and setting of Planets and Stars ... 254

1. Heliacal rising and setting of planets. 2. Days of rising and setting. 3. Planetary elongation for rising and setting. 4. Visibility corrections. 5. Computation of rising and setting. 6. Jupiter's rising and setting. 7. Venus: Rising and setting. 8. Rising and setting of a star. 9. Canopus: Rising.

##### 19. Conjunction of Planets ... 264

1. Types of planetary conjunctions. 2. Conjunction: Principle of computation. 3. Computation of conjunction.

##### 20. Conjunction of Stars and Planets ... 271

1. Conjunction of stars and planets. 2. Principle of planet-star conjunction. 3. Occultation of stars by planets. 4. Occultation of Rohiṇī by planets. 5. Occultation of stars by the Moon. 6. Time of star-planet conjunction.

#### V. INNOVATIVE TRENDS

##### 21. Novel Innovations ... 274

1. True longitude computation on the sphere of the zodiac. 2. Computation of True Moon. 3. Simplified astronomical procedures.

#### IV. OCCULTATION

##### 16. Eclipses ... 196

1. Cause stated in the Ṛgveda. 2. Cause of the lunar eclipse. 3. Lunar eclipse: Principle of computation. 4. Lunar eclipse computation: Vāsiṣṭha and Pauliṣa. 5. —Saurasiddhānta. 6. —Āryabhaṭīya. 7. —Āryabhaṭa's Midnight system. 8. —Emendation by Brahmagupta. 9. —Bhāskara I. 10. —Lalla. 11. —Bhāskara II. 12. —Karaṇaratna. 13. —Śrīpati. 14. —Vākyakaraṇa. 15. —Grahalāghava. 16. Lunar eclipse diagram: Vāsiṣṭha Pauliṣa. 17. —Āryabhaṭa's Midnight system. 18. —Bhāskara I. 19. —Lalla. 20. —Sūryasiddhānta. 21. —Bhāskara II. 22. —Karaṇaratna. 23. Solar eclipse: Computation: Pauliṣa. 24. —Romakasiddhānta. 25. —Saurasiddhānta. 26. —Āryabhaṭa's Midnight system. 27. —Bhāskara I. 28. —Lalla. 29. —Mahāsiddhānta. 30. —Bhāskara II. 31. —Karaṇaratna. 32. —Śrīpati. 33. —Grahalāghava. 34. —Solar eclipse diagram: Romakasiddhānta. 35. —Saurasiddhānta. 36. Colour of eclipses. 37. Conditions for non-prediction of eclipses. 38. —Inscriptional references: Lunar eclipses. 38. Solar eclipses.

##### 17. Phases of the Moon ... 241

1. Periodical appearance of the Moon. 2. Moon's luminosity. 3. Conditions of Moon's visibility. 4. Preliminaries for computation. 5. Visibility corrections: Ākṣa, Āyana and the Third. 6. Rising and setting of the Moon. 7. Moon's shadow. 8. Computation of Moon's cusps. 9. Moon's cusps—diagram.

##### 18. Heliacal rising and setting of Planets and Stars ... 254

1. Heliacal rising and setting of planets. 2. Days of rising and setting. 3. Planetary elongation for rising and setting. 4. Visibility corrections. 5. Computation of rising and setting. 6. Jupiter's rising and setting. 7. Venus: Rising and setting. 8. Rising and setting of a star. 9. Canopus: Rising.

##### 19. Conjunction of Planets ... 264

1. Types of planetary conjunctions. 2. Conjunction: Principle of computation. 3. Computation of conjunction.

##### 20. Conjunction of Stars and Planets ... 271

1. Conjunction of stars and planets. 2. Principle of planet-star conjunction. 3. Occultation of stars by planets. 4. Occultation of Rohiṇī by planets. 5. Occultation of stars by the Moon. 6. Time of star-planet conjunction.

#### V. INNOVATIVE TRENDS

##### 21. Novel Innovations ... 274

1. True longitude computation on the sphere of the zodiac. 2. Computation of True Moon. 3. Simplified astronomical procedures.

#### IV. OCCULTATION

##### 16. Eclipses ... 196

1. Cause stated in the Ṛgveda. 2. Cause of the lunar eclipse. 3. Lunar eclipse: Principle of computation. 4. Lunar eclipse computation: Vāsiṣṭha and Pauliṣa. 5. —Saurasiddhānta. 6. —Āryabhaṭīya. 7. —Āryabhaṭa's Midnight system. 8. —Emendation by Brahmagupta. 9. —Bhāskara I. 10. —Lalla. 11. —Bhāskara II. 12. —Karaṇaratna. 13. —Śrīpati. 14. —Vākyakaraṇa. 15. —Grahalāghava. 16. Lunar eclipse diagram: Vāsiṣṭha Pauliṣa. 17. —Āryabhaṭa's Midnight system. 18. —Bhāskara I. 19. —Lalla. 20. —Sūryasiddhānta. 21. —Bhāskara II. 22. —Karaṇaratna. 23. Solar eclipse: Computation: Pauliṣa. 24. —Romakasiddhānta. 25. —Saurasiddhānta. 26. —Āryabhaṭa's Midnight system. 27. —Bhāskara I. 28. —Lalla. 29. —Mahāsiddhānta. 30. —Bhāskara II. 31. —Karaṇaratna. 32. —Śrīpati. 33. —Grahalāghava. 34. —Solar eclipse diagram: Romakasiddhānta. 35. —Saurasiddhānta. 36. Colour of eclipses. 37. Conditions for non-prediction of eclipses. 38. —Inscriptional references: Lunar eclipses. 38. Solar eclipses.

##### 17. Phases of the Moon ... 241

1. Periodical appearance of the Moon. 2. Moon's luminosity. 3. Conditions of Moon's visibility. 4. Preliminaries for computation. 5. Visibility corrections: Ākṣa, Āyana and the Third. 6. Rising and setting of the Moon. 7. Moon's shadow. 8. Computation of Moon's cusps. 9. Moon's cusps—diagram.

##### 18. Heliacal rising and setting of Planets and Stars ... 254

1. Heliacal rising and setting of planets. 2. Days of rising and setting. 3. Planetary elongation for rising and setting. 4. Visibility corrections. 5. Computation of rising and setting. 6. Jupiter's rising and setting. 7. Venus: Rising and setting. 8. Rising and setting of a star. 9. Canopus: Rising.

##### 19. Conjunction of Planets ... 264

1. Types of planetary conjunctions. 2. Conjunction: Principle of computation. 3. Computation of conjunction.

##### 20. Conjunction of Stars and Planets ... 271

1. Conjunction of stars and planets. 2. Principle of planet-star conjunction. 3. Occultation of stars by planets. 4. Occultation of Rohiṇī by planets. 5. Occultation of stars by the Moon. 6. Time of star-planet conjunction.

#### V. INNOVATIVE TRENDS

##### 21. Novel Innovations ... 274

1. True longitude computation on the sphere of the zodiac. 2. Computation of True Moon. 3. Simplified astronomical procedures.

#### IV. OCCULTATION

##### 16. Eclipses ... 196

1. Cause stated in the Ṛgveda. 2. Cause of the lunar eclipse. 3. Lunar eclipse: Principle of computation. 4. Lunar eclipse computation: Vāsiṣṭha and Pauliṣa. 5. —Saurasiddhānta. 6. —Āryabhaṭīya. 7. —Āryabhaṭa's Midnight system. 8. —Emendation by Brahmagupta. 9. —Bhāskara I. 10. —Lalla. 11. —Bhāskara II. 12. —Karaṇaratna. 13. —Śrīpati. 14. —Vākyakaraṇa. 15. —Grahalāghava. 16. Lunar eclipse diagram: Vāsiṣṭha Pauliṣa. 17. —Āryabhaṭa's Midnight system. 18. —Bhāskara I. 19. —Lalla. 20. —Sūryasiddhānta. 21. —Bhāskara II. 22. —Karaṇaratna. 23. Solar eclipse: Computation: Pauliṣa. 24. —Romakasiddhānta. 25. —Saurasiddhānta. 26. —Āryabhaṭa's Midnight system. 27. —Bhāskara I. 28. —Lalla. 29. —Mahāsiddhānta. 30. —Bhāskara II. 31. —Karaṇaratna. 32. —Śrīpati. 33. —Grahalāghava. 34. —Solar eclipse diagram: Romakasiddhānta. 35. —Saurasiddhānta. 36. Colour of eclipses. 37. Conditions for non-prediction of eclipses. 38. —Inscriptional references: Lunar eclipses. 38. Solar eclipses.

##### 17. Phases of the Moon ... 241

1. Periodical appearance of the Moon. 2. Moon's luminosity. 3. Conditions of Moon's visibility. 4. Preliminaries for computation. 5. Visibility corrections: Ākṣa, Āyana and the Third. 6. Rising and setting of the Moon. 7. Moon's shadow. 8. Computation of Moon's cusps. 9. Moon's cusps—diagram.

##### 18. Heliacal rising and setting of Planets and Stars ... 254

1. Heliacal rising and setting of planets. 2. Days of rising and setting. 3. Planetary elongation for rising and setting. 4. Visibility corrections. 5. Computation of rising and setting. 6. Jupiter's rising and setting. 7. Venus: Rising and setting. 8. Rising and setting of a star. 9. Canopus: Rising.

##### 19. Conjunction of Planets ... 264

1. Types of planetary conjunctions. 2. Conjunction: Principle of computation. 3. Computation of conjunction.

##### 20. Conjunction of Stars and Planets ... 271

1. Conjunction of stars and planets. 2. Principle of planet-star conjunction. 3. Occultation of stars by planets. 4. Occultation of Rohiṇī by planets. 5. Occultation of stars by the Moon. 6. Time of star-planet conjunction.

#### V. INNOVATIVE TRENDS

##### 21. Novel Innovations ... 274

1. True longitude computation on the sphere of the zodiac. 2. Computation of True Moon. 3. Simplified astronomical procedures.

#### IV. OCCULTATION

##### 16. Eclipses ... 196

1. Cause stated in the Ṛgveda. 2. Cause of the lunar eclipse. 3. Lunar eclipse: Principle of computation. 4. Lunar eclipse computation: Vāsiṣṭha and Pauliṣa. 5. —Saurasiddhānta. 6. —Āryabhaṭīya. 7. —Āryabhaṭa's Midnight system. 8. —Emendation by Brahmagupta. 9. —Bhāskara I. 10. —Lalla. 11. —Bhāskara II. 12. —Karaṇaratna. 13. —Śrīpati. 14. —Vākyakaraṇa. 15. —Grahalāghava. 16. Lunar eclipse diagram: Vāsiṣṭha Pauliṣa. 17. —Āryabhaṭa's Midnight system. 18. —Bhāskara I. 19. —Lalla. 20. —Sūryasiddhānta. 21. —Bhāskara II. 22. —Karaṇaratna. 23. Solar eclipse: Computation: Pauliṣa. 24. —Romakasiddhānta. 25. —Saurasiddhānta. 26. —Āryabhaṭa's Midnight system. 27. —Bhāskara I. 28. —Lalla. 29. —Mahāsiddhānta. 30. —Bhāskara II. 31. —Karaṇaratna. 32. —Śrīpati. 33. —Grahalāghava. 34. —Solar eclipse diagram: Romakasiddhānta. 35. —Saurasiddhānta. 36. Colour of eclipses. 37. Conditions for non-prediction of eclipses. 38. —Inscriptional references: Lunar eclipses. 38. Solar eclipses.

##### 17. Phases of the Moon ... 241

1. Periodical appearance of the Moon. 2. Moon's luminosity. 3. Conditions of Moon's visibility. 4. Preliminaries for computation. 5. Visibility corrections: Ākṣa, Āyana and the Third. 6. Rising and setting of the Moon. 7. Moon's shadow. 8. Computation of Moon's cusps. 9. Moon's cusps—diagram.

##### 18. Heliacal rising and setting of Planets and Stars ... 254

1. Heliacal rising and setting of planets. 2. Days of rising and setting. 3. Planetary elongation for rising and setting. 4. Visibility corrections. 5. Computation of rising and setting. 6. Jupiter's rising and setting. 7. Venus: Rising and setting. 8. Rising and setting of a star. 9. Canopus: Rising.

##### 19. Conjunction of Planets ... 264

1. Types of planetary conjunctions. 2. Conjunction: Principle of computation. 3. Computation of conjunction.

##### 20. Conjunction of Stars and Planets ... 271

1. Conjunction of stars and planets. 2. Principle of planet-star conjunction. 3. Occultation of stars by planets. 4. Occultation of Rohiṇī by planets. 5. Occultation of stars by the Moon. 6. Time of star-planet conjunction.

#### V. INNOVATIVE TRENDS

##### 21. Novel Innovations ... 274

1. True longitude computation on the sphere of the zodiac. 2. Computation of True Moon. 3. Simplified astronomical procedures.

#### IV. OCCULTATION

##### 16. Eclipses ... 196

1. Cause stated in the Ṛgveda. 2. Cause of the lunar eclipse. 3. Lunar eclipse: Principle of computation. 4. Lunar eclipse computation: Vāsiṣṭha and Pauliṣa. 5. —Saurasiddhānta. 6. —Āryabhaṭīya. 7. —Āryabhaṭa's Midnight system. 8. —Emendation by Brahmagupta. 9. —Bhāskara I. 10. —Lalla. 11. —Bhāskara II. 12. —Karaṇaratna. 13. —Śrīpati. 14. —Vākyakaraṇa. 15. —Grahalāghava. 16. Lunar eclipse diagram: Vāsiṣṭha Pauliṣa. 17. —Āryabhaṭa's Midnight system. 18. —Bhāskara I. 19. —Lalla. 20. —Sūryasiddhānta. 21. —Bhāskara II. 22. —Karaṇaratna. 23. Solar eclipse: Computation: Pauliṣa. 24. —Romakasiddhānta. 25. —Saurasiddhānta. 26. —Āryabhaṭa's Midnight system. 27. —Bhāskara I. 28. —Lalla. 29. —Mahāsiddhānta. 30. —Bhāskara II. 31. —Karaṇaratna. 32. —Śrīpati. 33. —Grahalāghava. 34. —Solar eclipse diagram: Romakasiddhānta. 35. —Saurasiddhānta. 36. Colour of eclipses. 37. Conditions for non-prediction of eclipses. 38. —Inscriptional references: Lunar eclipses. 38. Solar eclipses.

##### 17. Phases of the Moon ... 241

1. Periodical appearance of the Moon. 2. Moon's luminosity. 3. Conditions of Moon's visibility. 4. Preliminaries for computation. 5. Visibility corrections: Ākṣa, Āyana and the Third. 6. Rising and setting of the Moon. 7. Moon's shadow. 8. Computation of Moon's cusps. 9. Moon's cusps—diagram.

##### 18. Heliacal rising and setting of Planets and Stars ... 254

1. Heliacal rising and setting of planets. 2. Days of rising and setting. 3. Planetary elongation for rising and setting. 4. Visibility corrections. 5. Computation of rising and setting. 6. Jupiter's rising and setting. 7. Venus: Rising and setting. 8. Rising and setting of a star. 9. Canopus: Rising.

##### 19. Conjunction of Planets ... 264

1. Types of planetary conjunctions. 2. Conjunction: Principle of computation. 3. Computation of conjunction.

##### 20. Conjunction of Stars and Planets ... 271

1. Conjunction of stars and planets. 2. Principle of planet-star conjunction. 3. Occultation of stars by planets. 4. Occultation of Rohiṇī by planets. 5. Occultation of stars by the Moon. 6. Time of star-planet conjunction.

#### V. INNOVATIVE TRENDS

##### 21. Novel Innovations ... 274

1. True longitude computation on the sphere of the zodiac. 2. Computation of True Moon. 3. Simplified astronomical procedures.

#### IV. OCCULTATION

##### 16. Eclipses ... 196

1. Cause stated in the Ṛgveda. 2. Cause of the lunar eclipse. 3. Lunar eclipse: Principle of computation. 4. Lunar eclipse computation: Vāsiṣṭha and Pauliṣa. 5. —Saurasiddhānta. 6. —Āryabhaṭīya. 7. —Āryabhaṭa's Midnight system. 8. —Emendation by Brahmagupta. 9. —Bhāskara I. 10. —Lalla. 11. —Bhāskara II. 12. —Karaṇaratna. 13. —Śrīpati. 14. —Vākyakaraṇa. 15. —Grahalāghava. 16. Lunar eclipse diagram: Vāsiṣṭha Pauliṣa. 17. —Āryabhaṭa's Midnight system. 18. —Bhāskara I. 19. —Lalla. 20. —Sūryasiddhānta. 21. —Bhāskara II. 22. —Karaṇaratna. 23. Solar eclipse: Computation: Pauliṣa. 24. —Romakasiddhānta. 25. —Saurasiddhānta. 26. —Āryabhaṭa's Midnight system. 27. —Bhāskara I. 28. —Lalla. 29. —Mahāsiddhānta. 30. —Bhāskara II. 31. —Karaṇaratna. 32. —Śrīpati. 33. —Grahalāghava. 34. —Solar eclipse diagram: Romakasiddhānta. 35. —Saurasiddhānta. 36. Colour of eclipses. 37. Conditions for non-prediction of eclipses. 38. —Inscriptional references: Lunar eclipses. 38. Solar eclipses.

##### 17. Phases of the Moon ... 241

1. Periodical appearance of the Moon. 2. Moon's luminosity. 3. Conditions of Moon's visibility. 4. Preliminaries for computation. 5. Visibility corrections: Ākṣa, Āyana and the Third. 6. Rising and setting of the Moon. 7. Moon's shadow. 8. Computation of Moon's cusps. 9. Moon's cusps—diagram.

##### 18. Heliacal rising and setting of Planets and Stars ... 254

1. Heliacal rising and setting of planets. 2. Days of rising and setting. 3. Planetary elongation for rising and setting. 4. Visibility corrections. 5. Computation of rising and setting. 6. Jupiter's rising and setting. 7. Venus: Rising and setting. 8. Rising and setting of a star. 9. Canopus: Rising.

##### 19. Conjunction of Planets ... 264

1. Types of planetary conjunctions. 2. Conjunction: Principle of computation. 3. Computation of conjunction.

##### 20. Conjunction of Stars and Planets ... 271

1. Conjunction of stars and planets. 2. Principle of planet-star conjunction. 3. Occultation of stars by planets. 4. Occultation of Rohiṇī by planets. 5. Occultation of stars by the Moon. 6. Time of star-planet conjunction.

#### V. INNOVATIVE TRENDS

##### 21. Novel Innovations ... 274

1. True longitude computation on the sphere of the zodiac. 2. Computation of True Moon. 3. Simplified astronomical procedures.

#### IV. OCCULTATION

##### 16. Eclipses ... 196

1. Cause stated in the Ṛgveda. 2. Cause of the lunar eclipse. 3. Lunar eclipse: Principle of computation. 4. Lunar eclipse computation: Vāsiṣṭha and Pauliṣa. 5. —Saurasiddhānta. 6. —Āryabhaṭīya. 7. —Āryabhaṭa's Midnight system. 8. —Emendation by Brahmagupta. 9. —Bhāskara I. 10. —Lalla. 11. —Bhāskara II. 12. —Karaṇaratna. 13. —Śrīpati. 14. —Vākyakaraṇa. 15. —Grahalāghava. 16. Lunar eclipse diagram: Vāsiṣṭha Pauliṣa. 17. —Āryabhaṭa's Midnight system. 18. —Bhāskara I. 19. —Lalla. 20. —Sūryasiddhānta. 21. —Bhāskara II. 22. —Karaṇaratna. 23. Solar eclipse: Computation: Pauliṣa. 24. —Romakasiddhānta. 25. —Saurasiddhānta. 26. —Āryabhaṭa's Midnight system. 27. —Bhāskara I. 28. —Lalla. 29. —Mahāsiddhānta. 30. —Bhāskara II. 31. —Karaṇaratna. 32. —Śrīpati. 33. —Grahalāghava. 34. —Solar eclipse diagram: Romakasiddhānta. 35. —Saurasiddhānta. 36. Colour of eclipses. 37. Conditions for non-prediction of eclipses. 38. —Inscriptional references: Lunar eclipses. 38. Solar eclipses.

##### 17. Phases of the Moon ... 241

1. Periodical appearance of the Moon. 2. Moon's luminosity. 3. Conditions of Moon's visibility. 4. Preliminaries for computation. 5. Visibility corrections: Ākṣa, Āyana and the Third. 6. Rising and setting of the Moon. 7. Moon's shadow. 8. Computation of Moon's cusps. 9. Moon's cusps—diagram.

##### 18. Heliacal rising and setting of Planets and Stars ... 254

1. Heliacal rising and setting of planets. 2. Days of rising and setting. 3. Planetary elongation for rising and setting. 4. Visibility corrections. 5. Computation of rising and setting. 6. Jupiter's rising and setting. 7. Venus: Rising and setting. 8. Rising and setting of a star. 9. Canopus: Rising.

##### 19. Conjunction of Planets ... 264

1. Types of planetary conjunctions. 2. Conjunction: Principle of computation. 3. Computation of conjunction.

##### 20. Conjunction of Stars and Planets ... 271

1. Conjunction of stars and planets. 2. Principle of planet-star conjunction. 3. Occultation of stars by planets. 4. Occultation of Rohiṇī by planets. 5. Occultation of stars by the Moon. 6. Time of star-planet conjunction.

#### V. INNOVATIVE TRENDS

##### 21. Novel Innovations ... 274

1. True longitude computation on the sphere of the zodiac. 2. Computation of True Moon. 3. Simplified astronomical procedures.



#### IV. OCCULTATION

##### 16. Eclipses ... 196

1. Cause stated in the Ṛgveda. 2. Cause of the lunar eclipse. 3. Lunar eclipse: Principle of computation. 4. Lunar eclipse computation: Vāsiṣṭha and Pauliṣa. 5. —Saurasiddhānta. 6. —Āryabhaṭīya. 7. —Āryabhaṭa's Midnight system. 8. —Emendation by Brahmagupta. 9. —Bhāskara I. 10. —Lalla. 11. —Bhāskara II. 12. —Karaṇaratna. 13. —Śrīpati. 14. —Vākyakaraṇa. 15. —Grahalāghava. 16. Lunar eclipse diagram: Vāsiṣṭha Pauliṣa. 17. —Āryabhaṭa's Midnight system. 18. —Bhāskara I. 19. —Lalla. 20. —Sūryasiddhānta. 21. —Bhāskara II. 22. —Karaṇaratna. 23. Solar eclipse: Computation: Pauliṣa. 24. —Romakasiddhānta. 25. —Saurasiddhānta. 26. —Āryabhaṭa's Midnight system. 27. —Bhāskara I. 28. —Lalla. 29. —Mahāsiddhānta. 30. —Bhāskara II. 31. —Karaṇaratna. 32. —Śrīpati. 33. —Grahalāghava. 34. —Solar eclipse diagram: Romakasiddhānta. 35. —Saurasiddhānta. 36. Colour of eclipses. 37. Conditions for non-prediction of eclipses. 38. —Inscriptional references: Lunar eclipses. 38. Solar eclipses.

##### 17. Phases of the Moon ... 241

1. Periodical appearance of the Moon. 2. Moon's luminosity. 3. Conditions of Moon's visibility. 4. Preliminaries for computation. 5. Visibility corrections: Ākṣa, Āyana and the Third. 6. Rising and setting of the Moon. 7. Moon's shadow. 8. Computation of Moon's cusps. 9. Moon's cusps—diagram.

##### 18. Heliacal rising and setting of Planets and Stars ... 254

1. Heliacal rising and setting of planets. 2. Days of rising and setting. 3. Planetary elongation for rising and setting. 4. Visibility corrections. 5. Computation of rising and setting. 6. Jupiter's rising and setting. 7. Venus: Rising and setting. 8. Rising and setting of a star. 9. Canopus: Rising.

##### 19. Conjunction of Planets ... 264

1. Types of planetary conjunctions. 2. Conjunction: Principle of computation. 3. Computation of conjunction.

##### 20. Conjunction of Stars and Planets ... 271

1. Conjunction of stars and planets. 2. Principle of planet-star conjunction. 3. Occultation of stars by planets. 4. Occultation of Rohiṇī by planets. 5. Occultation of stars by the Moon. 6. Time of star-planet conjunction.

#### V. INNOVATIVE TRENDS

##### 21. Novel Innovations ... 274

1. True longitude computation on the sphere of the zodiac. 2. Computation of True Moon. 3. Simplified astronomical procedures.

#### IV. OCCULTATION

##### 16. Eclipses ... 196

1. Cause stated in the Ṛgveda. 2. Cause of the lunar eclipse. 3. Lunar eclipse: Principle of computation. 4. Lunar eclipse computation: Vāsiṣṭha and Pauliṣa. 5. —Saurasiddhānta. 6. —Āryabhaṭīya. 7. —Āryabhaṭa's Midnight system. 8. —Emendation by Brahmagupta. 9. —Bhāskara I. 10. —Lalla. 11. —Bhāskara II. 12. —Karaṇaratna. 13. —Śrīpati. 14. —Vākyakaraṇa. 15. —Grahalāghava. 16. Lunar eclipse diagram: Vāsiṣṭha Pauliṣa. 17. —Āryabhaṭa's Midnight system. 18. —Bhāskara I. 19. —Lalla. 20. —Sūryasiddhānta. 21. —Bhāskara II. 22. —Karaṇaratna. 23. Solar eclipse: Computation: Pauliṣa. 24. —Romakasiddhānta. 25. —Saurasiddhānta. 26. —Āryabhaṭa's Midnight system. 27. —Bhāskara I. 28. —Lalla. 29. —Mahāsiddhānta. 30. —Bhāskara II. 31. —Karaṇaratna. 32. —Śrīpati. 33. —Grahalāghava. 34. —Solar eclipse diagram: Romakasiddhānta. 35. —Saurasiddhānta. 36. Colour of eclipses. 37. Conditions for non-prediction of eclipses. 38. —Inscriptional references: Lunar eclipses. 38. Solar eclipses.

##### 17. Phases of the Moon ... 241

1. Periodical appearance of the Moon. 2. Moon's luminosity. 3. Conditions of Moon's visibility. 4. Preliminaries for computation. 5. Visibility corrections: Ākṣa, Āyana and the Third. 6. Rising and setting of the Moon. 7. Moon's shadow. 8. Computation of Moon's cusps. 9. Moon's cusps—diagram.

##### 18. Heliacal rising and setting of Planets and Stars ... 254

1. Heliacal rising and setting of planets. 2. Days of rising and setting. 3. Planetary elongation for rising and setting. 4. Visibility corrections. 5. Computation of rising and setting. 6. Jupiter's rising and setting. 7. Venus: Rising and setting. 8. Rising and setting of a star. 9. Canopus: Rising.

##### 19. Conjunction of Planets ... 264

1. Types of planetary conjunctions. 2. Conjunction: Principle of computation. 3. Computation of conjunction.

##### 20. Conjunction of Stars and Planets ... 271

1. Conjunction of stars and planets. 2. Principle of planet-star conjunction. 3. Occultation of stars by planets. 4. Occultation of Rohiṇī by planets. 5. Occultation of stars by the Moon. 6. Time of star-planet conjunction.

#### V. INNOVATIVE TRENDS

##### 21. Novel Innovations ... 274

1. True longitude computation on the sphere of the zodiac. 2. Computation of True Moon. 3. Simplified astronomical procedures.

#### IV. OCCULTATION

##### 16. Eclipses ... 196

1. Cause stated in the Ṛgveda. 2. Cause of the lunar eclipse. 3. Lunar eclipse: Principle of computation. 4. Lunar eclipse computation: Vāsiṣṭha and Pauliṣa. 5. —Saurasiddhānta. 6. —Āryabhaṭīya. 7. —Āryabhaṭa's Midnight system. 8. —Emendation by Brahmagupta. 9. —Bhāskara I. 10. —Lalla. 11. —Bhāskara II. 12. —Karaṇaratna. 13. —Śrīpati. 14. —Vākyakaraṇa. 15. —Grahalāghava. 16. Lunar eclipse diagram: Vāsiṣṭha Pauliṣa. 17. —Āryabhaṭa's Midnight system. 18. —Bhāskara I. 19. —Lalla. 20. —Sūryasiddhānta. 21. —Bhāskara II. 22. —Karaṇaratna. 23. Solar eclipse: Computation: Pauliṣa. 24. —Romakasiddhānta. 25. —Saurasiddhānta. 26. —Āryabhaṭa's Midnight system. 27. —Bhāskara I. 28. —Lalla. 29. —Mahāsiddhānta. 30. —Bhāskara II. 31. —Karaṇaratna. 32. —Śrīpati. 33. —Grahalāghava. 34. —Solar eclipse diagram: Romakasiddhānta. 35. —Saurasiddhānta. 36. Colour of eclipses. 37. Conditions for non-prediction of eclipses. 38. —Inscriptional references: Lunar eclipses. 38. Solar eclipses.

##### 17. Phases of the Moon ... 241

1. Periodical appearance of the Moon. 2. Moon's luminosity. 3. Conditions of Moon's visibility. 4. Preliminaries for computation. 5. Visibility corrections: Ākṣa, Āyana and the Third. 6. Rising and setting of the Moon. 7. Moon's shadow. 8. Computation of Moon's cusps. 9. Moon's cusps—diagram.

##### 18. Heliacal rising and setting of Planets and Stars ... 254

1. Heliacal rising and setting of planets. 2. Days of rising and setting. 3. Planetary elongation for rising and setting. 4. Visibility corrections. 5. Computation of rising and setting. 6. Jupiter's rising and setting. 7. Venus: Rising and setting. 8. Rising and setting of a star. 9. Canopus: Rising.

##### 19. Conjunction of Planets ... 264

1. Types of planetary conjunctions. 2. Conjunction: Principle of computation. 3. Computation of conjunction.

##### 20. Conjunction of Stars and Planets ... 271

1. Conjunction of stars and planets. 2. Principle of planet-star conjunction. 3. Occultation of stars by planets. 4. Occultation of Rohiṇī by planets. 5. Occultation of stars by the Moon. 6. Time of star-planet conjunction.

#### V. INNOVATIVE TRENDS

##### 21. Novel Innovations ... 274

1. True longitude computation on the sphere of the zodiac. 2. Computation of True Moon. 3. Simplified astronomical procedures.

#### IV. OCCULTATION

##### 16. Eclipses ... 196

1. Cause stated in the Ṛgveda. 2. Cause of the lunar eclipse. 3. Lunar eclipse: Principle of computation. 4. Lunar eclipse computation: Vāsiṣṭha and Pauliṣa. 5. —Saurasiddhānta. 6. —Āryabhaṭīya. 7. —Āryabhaṭa's Midnight system. 8. —Emendation by Brahmagupta. 9. —Bhāskara I. 10. —Lalla. 11. —Bhāskara II. 12. —Karaṇaratna. 13. —Śrīpati. 14. —Vākyakaraṇa. 15. —Grahalāghava. 16. Lunar eclipse diagram: Vāsiṣṭha Pauliṣa. 17. —Āryabhaṭa's Midnight system. 18. —Bhāskara I. 19. —Lalla. 20. —Sūryasiddhānta. 21. —Bhāskara II. 22. —Karaṇaratna. 23. Solar eclipse: Computation: Pauliṣa. 24. —Romakasiddhānta. 25. —Saurasiddhānta. 26. —Āryabhaṭa's Midnight system. 27. —Bhāskara I. 28. —Lalla. 29. —Mahāsiddhānta. 30. —Bhāskara II. 31. —Karaṇaratna. 32. —Śrīpati. 33. —Grahalāghava. 34. —Solar eclipse diagram: Romakasiddhānta. 35. —Saurasiddhānta. 36. Colour of eclipses. 37. Conditions for non-prediction of eclipses. 38. —Inscriptional references: Lunar eclipses. 38. Solar eclipses.

##### 17. Phases of the Moon ... 241

1. Periodical appearance of the Moon. 2. Moon's luminosity. 3. Conditions of Moon's visibility. 4. Preliminaries for computation. 5. Visibility corrections: Ākṣa, Āyana and the Third. 6. Rising and setting of the Moon. 7. Moon's shadow. 8. Computation of Moon's cusps. 9. Moon's cusps—diagram.

##### 18. Heliacal rising and setting of Planets and Stars ... 254

1. Heliacal rising and setting of planets. 2. Days of rising and setting. 3. Planetary elongation for rising and setting. 4. Visibility corrections. 5. Computation of rising and setting. 6. Jupiter's rising and setting. 7. Venus: Rising and setting. 8. Rising and setting of a star. 9. Canopus: Rising.

##### 19. Conjunction of Planets ... 264

1. Types of planetary conjunctions. 2. Conjunction: Principle of computation. 3. Computation of conjunction.

##### 20. Conjunction of Stars and Planets ... 271

1. Conjunction of stars and planets. 2. Principle of planet-star conjunction. 3. Occultation of stars by planets. 4. Occultation of Rohiṇī by planets. 5. Occultation of stars by the Moon. 6. Time of star-planet conjunction.

#### V. INNOVATIVE TRENDS

##### 21. Novel Innovations ... 274

1. True longitude computation on the sphere of the zodiac. 2. Computation of True Moon. 3. Simplified astronomical procedures.

#### IV. OCCULTATION

##### 16. Eclipses ... 196

1. Cause stated in the Ṛgveda. 2. Cause of the lunar eclipse. 3. Lunar eclipse: Principle of computation. 4. Lunar eclipse computation: Vāsiṣṭha and Pauliṣa. 5. —Saurasiddhānta. 6. —Āryabhaṭīya. 7. —Āryabhaṭa's Midnight system. 8. —Emendation by Brahmagupta. 9. —Bhāskara I. 10. —Lalla. 11. —Bhāskara II. 12. —Karaṇaratna. 13. —Śrīpati. 14. —Vākyakaraṇa. 15. —Grahalāghava. 16. Lunar eclipse diagram: Vāsiṣṭha Pauliṣa. 17. —Āryabhaṭa's Midnight system. 18. —Bhāskara I. 19. —Lalla. 20. —Sūryasiddhānta. 21. —Bhāskara II. 22. —Karaṇaratna. 23. Solar eclipse: Computation: Pauliṣa. 24. —Romakasiddhānta. 25. —Saurasiddhānta. 26. —Āryabhaṭa's Midnight system. 27. —Bhāskara I. 28. —Lalla. 29. —Mahāsiddhānta. 30. —Bhāskara II. 31. —Karaṇaratna. 32. —Śrīpati. 33. —Grahalāghava. 34. —Solar eclipse diagram: Romakasiddhānta. 35. —Saurasiddhānta. 36. Colour of eclipses. 37. Conditions for non-prediction of eclipses. 38. —Inscriptional references: Lunar eclipses. 38. Solar eclipses.

##### 17. Phases of the Moon ... 241

1. Periodical appearance of the Moon. 2. Moon's luminosity. 3. Conditions of Moon's visibility. 4. Preliminaries for computation. 5. Visibility corrections: Ākṣa, Āyana and the Third. 6. Rising and setting of the Moon. 7. Moon's shadow. 8. Computation of Moon's cusps. 9. Moon's cusps—diagram.

##### 18. Heliacal rising and setting of Planets and Stars ... 254

1. Heliacal rising and setting of planets. 2. Days of rising and setting. 3. Planetary elongation for rising and setting. 4. Visibility corrections. 5. Computation of rising and setting. 6. Jupiter's rising and setting. 7. Venus: Rising and setting. 8. Rising and setting of a star. 9. Canopus: Rising.

##### 19. Conjunction of Planets ... 264

1. Types of planetary conjunctions. 2. Conjunction: Principle of computation. 3. Computation of conjunction.

##### 20. Conjunction of Stars and Planets ... 271

1. Conjunction of stars and planets. 2. Principle of planet-star conjunction. 3. Occultation of stars by planets. 4. Occultation of Rohiṇī by planets. 5. Occultation of stars by the Moon. 6. Time of star-planet conjunction.

#### V. INNOVATIVE TRENDS

##### 21. Novel Innovations ... 274

1. True longitude computation on the sphere of the zodiac. 2. Computation of True Moon. 3. Simplified astronomical procedures.

The meridian point of the ecliptic (*madhya-lagna*) is obtained. Find its declination, north or south. If north, find the difference between the declination and the latitude of the place. If south, add them. The sine of the result is called *madhyajyā*, (i.e., sine zenith distance) of the point. (18)

#### *Dṛkkṣepa of the Sun*

Find the sine of the longitude of the Orient Ecliptic point (OEP) at new moon, multiply by the sine of maximum declination, 48' 48", and divide by the sine of the colatitude. (This is sine amplitude of OEP, called *udayajyā*.) Multiply this by the sine of the zenith distance, (ZD) of MEP, already found, and divide by 120'. Square the result and subtract from the square of the sine ZD, of the MEP. (19)

Set the remainder in two places. In one place, find its square root. This is the sine of the zenith-distance of the nonagesimal (ZD of N) called the Sun's *dṛk-kṣepa*. Keep this aside for future work. (20)

#### *Gnomon*

Subtract from 14,400 the square of sin ZD of N, (kept unused in the other place in the previous work,) and find its square root. Multiply this by the sine of the distance between the Sun and the OEP, and divide by 120'. The result, which is the sine of the Sun's altitude, is called *śaṅku*, i.e., the Sun's *śaṅku*. (21)

Subtract the square of the Sun's *śaṅku* obtained above from 14,400. From the remainder subtract the square of the Sun's *dṛk-kṣepa* kept apart in the previous work and find its square root, technically called *dṛggaṭi*. Multiply this by 18 and divide by each of the *kakṣās* of the Sun and the Moon. (22)

Find the respective arcs (in minutes) and get their difference. Treat this as the minutes of *tithi* and find the *tithi-nāḍikās* for this. Subtract the *nāḍikās* from the time of new moon if forenoon, and add, if afternoon. The parallax-corrected new moon (PCN) is determined. Repeat the operation of finding the PCN, till there is no difference (in time) in two successive operations. This is the PCN (to be used in the subsequent work.). (23)

#### *Parallax in latitude*

Take the sine ZD of N last obtained in the successive approximation, multiply by 18, and divide by the respective *kakṣās*. The respective sine parallax in latitude is got. The arc of their difference is the relative parallax in latitude and its direction is that of sine ZD of MEP (i.e., of M from Z). (24)

The Moon's latitude at the time taken is to be got by using the sine (of Moon—Rāhu), and this is to be

added to or subtracted from the parallax correction in latitude, (according to their direction). This is the parallax-corrected latitude. This is to be determined separately for each of the times separately, and from them the times of total obscuration and total duration are to be got. (25)

Subtract the square of the parallax-corrected latitude from the square of the sum of the semi-diameters of the Sun and the Moon and find the square root. Double this, and find the time for it, treating it as the motion of *tithi*. (The duration of the eclipse is got.) (26)

Find the *nāḍis* of parallax for the time of the beginning. If the time of beginning and the new moon are both in the forenoon or both in the afternoon, find the difference of the *nāḍis* of parallax and add it to the half duration to get the correct half duration, (to be subtracted from the time of the corrected new moon). If one is before noon and the other afternoon, add the *nāḍis* of parallax, and add it to the half-duration, to get the correct half duration (to be subtracted from the time of parallax-corrected new moon). Do the same for the sine of the end of the eclipse (to find the correct half duration to be added to the parallax-corrected new moon, to get the correct last contact).<sup>1</sup> (27). (TSK)

#### —आर्यभटीयार्धरात्रपक्षः

16. 26. 1. विन्निभलग्नापक्रमविक्षेपाक्षांशयुतिविशेषोनात् ।  
भक्तितयाज्ज्या छेदस्त्रिज्यार्धकृतेः फलेन हृता ॥ १ ॥  
विन्निभलग्नान्तरजीवा धटिकादि लम्बनं सूर्ये ।  
ऋणमधिके धनमूने विन्निभलग्नान्तिथावसकृत् ॥ २ ॥  
ये युतिविशेषभागास्तज्ज्यावनतिगुणा त्रयोदशभिः ।  
'खाब्धि'हृता विक्षेपं कृत्वा तात्कालिकशशङ्कात् ॥  
संयोगान्तरमवनतिशशङ्कविक्षेपयोः समान्यदिशोः ।  
स्फुटविक्षेपः शशिवत् स्थित्यर्धविमर्ददलनाड्यः ॥ ४ ॥  
प्राग्वल्लम्बनमसकृत् तिथ्यन्तात् स्थितिदलेन हीनयुतात् ।  
तन्मध्यान्तरयुक्तं स्थितिदलमेवं विमर्दार्धम् ॥ ५ ॥  
अधिकेऽधिकान्तरज्यालम्बनमेवं तदृणधनैकत्वे ।  
हीने हीनं भेदे तदैकयुतमुक्तवत्ते च ॥ ६ ॥

(Brahmagupta, *KK*, 1. 5. 1-6)

#### —Āryabhaṭa's Midnight system

Find the sum or difference of the *krānti* and *vikṣepa* of the *vitribha-lagna* and the latitude of the place. Subtract the result from 90° and find the *jyā* of the remainder. Divide the square of half the *trijyā* by this *jyā*. Divide the *jyā* of the difference of the longitudes of the Sun and *vitribha-lagna* by this result. Thus is obtained the

<sup>1</sup> For detailed elucidation and rationale involved, see *PS:TSK*, 9. 15-27.

#### IV. OCCULTATION

##### 16. Eclipses ... 196

1. Cause stated in the Ṛgveda. 2. Cause of the lunar eclipse. 3. Lunar eclipse: Principle of computation. 4. Lunar eclipse computation: Vāsiṣṭha and Pauliṣa. 5. —Saurasiddhānta. 6. —Āryabhaṭīya. 7. —Āryabhaṭa's Midnight system. 8. —Emendation by Brahmagupta. 9. —Bhāskara I. 10. —Lalla. 11. —Bhāskara II. 12. —Karaṇaratna. 13. —Śrīpati. 14. —Vākyakaraṇa. 15. —Grahalāghava. 16. Lunar eclipse diagram: Vāsiṣṭha Pauliṣa. 17. —Āryabhaṭa's Midnight system. 18. —Bhāskara I. 19. —Lalla. 20. —Sūryasiddhānta. 21. —Bhāskara II. 22. —Karaṇaratna. 23. Solar eclipse: Computation: Pauliṣa. 24. —Romakasiddhānta. 25. —Saurasiddhānta. 26. —Āryabhaṭa's Midnight system. 27. —Bhāskara I. 28. —Lalla. 29. —Mahāsiddhānta. 30. —Bhāskara II. 31. —Karaṇaratna. 32. —Śrīpati. 33. —Grahalāghava. 34. —Solar eclipse diagram: Romakasiddhānta. 35. —Saurasiddhānta. 36. Colour of eclipses. 37. Conditions for non-prediction of eclipses. 38. —Inscriptional references: Lunar eclipses. 38. Solar eclipses.

##### 17. Phases of the Moon ... 241

1. Periodical appearance of the Moon. 2. Moon's luminosity. 3. Conditions of Moon's visibility. 4. Preliminaries for computation. 5. Visibility corrections: Ākṣa, Āyana and the Third. 6. Rising and setting of the Moon. 7. Moon's shadow. 8. Computation of Moon's cusps. 9. Moon's cusps—diagram.

##### 18. Heliacal rising and setting of Planets and Stars ... 254

1. Heliacal rising and setting of planets. 2. Days of rising and setting. 3. Planetary elongation for rising and setting. 4. Visibility corrections. 5. Computation of rising and setting. 6. Jupiter's rising and setting. 7. Venus: Rising and setting. 8. Rising and setting of a star. 9. Canopus: Rising.

##### 19. Conjunction of Planets ... 264

1. Types of planetary conjunctions. 2. Conjunction: Principle of computation. 3. Computation of conjunction.

##### 20. Conjunction of Stars and Planets ... 271

1. Conjunction of stars and planets. 2. Principle of planet-star conjunction. 3. Occultation of stars by planets. 4. Occultation of Rohiṇī by planets. 5. Occultation of stars by the Moon. 6. Time of star-planet conjunction.

#### V. INNOVATIVE TRENDS

##### 21. Novel Innovations ... 274

1. True longitude computation on the sphere of the zodiac. 2. Computation of True Moon. 3. Simplified astronomical procedures.

#### IV. OCCULTATION

##### 16. Eclipses ... 196

1. Cause stated in the Ṛgveda. 2. Cause of the lunar eclipse. 3. Lunar eclipse: Principle of computation. 4. Lunar eclipse computation: Vāsiṣṭha and Pauliṣa. 5. —Saurasiddhānta. 6. —Āryabhaṭīya. 7. —Āryabhaṭa's Midnight system. 8. —Emendation by Brahmagupta. 9. —Bhāskara I. 10. —Lalla. 11. —Bhāskara II. 12. —Karaṇaratna. 13. —Śrīpati. 14. —Vākyakaraṇa. 15. —Grahalāghava. 16. Lunar eclipse diagram: Vāsiṣṭha Pauliṣa. 17. —Āryabhaṭa's Midnight system. 18. —Bhāskara I. 19. —Lalla. 20. —Sūryasiddhānta. 21. —Bhāskara II. 22. —Karaṇaratna. 23. Solar eclipse: Computation: Pauliṣa. 24. —Romakasiddhānta. 25. —Saurasiddhānta. 26. —Āryabhaṭa's Midnight system. 27. —Bhāskara I. 28. —Lalla. 29. —Mahāsiddhānta. 30. —Bhāskara II. 31. —Karaṇaratna. 32. —Śrīpati. 33. —Grahalāghava. 34. —Solar eclipse diagram: Romakasiddhānta. 35. —Saurasiddhānta. 36. Colour of eclipses. 37. Conditions for non-prediction of eclipses. 38. —Inscriptional references: Lunar eclipses. 38. Solar eclipses.

##### 17. Phases of the Moon ... 241

1. Periodical appearance of the Moon. 2. Moon's luminosity. 3. Conditions of Moon's visibility. 4. Preliminaries for computation. 5. Visibility corrections: Ākṣa, Āyana and the Third. 6. Rising and setting of the Moon. 7. Moon's shadow. 8. Computation of Moon's cusps. 9. Moon's cusps—diagram.

##### 18. Heliacal rising and setting of Planets and Stars ... 254

1. Heliacal rising and setting of planets. 2. Days of rising and setting. 3. Planetary elongation for rising and setting. 4. Visibility corrections. 5. Computation of rising and setting. 6. Jupiter's rising and setting. 7. Venus: Rising and setting. 8. Rising and setting of a star. 9. Canopus: Rising.

##### 19. Conjunction of Planets ... 264

1. Types of planetary conjunctions. 2. Conjunction: Principle of computation. 3. Computation of conjunction.

##### 20. Conjunction of Stars and Planets ... 271

1. Conjunction of stars and planets. 2. Principle of planet-star conjunction. 3. Occultation of stars by planets. 4. Occultation of Rohiṇī by planets. 5. Occultation of stars by the Moon. 6. Time of star-planet conjunction.

#### V. INNOVATIVE TRENDS

##### 21. Novel Innovations ... 274

1. True longitude computation on the sphere of the zodiac. 2. Computation of True Moon. 3. Simplified astronomical procedures.



#### IV. OCCULTATION

##### 16. Eclipses ... 196

1. Cause stated in the Ṛgveda. 2. Cause of the lunar eclipse. 3. Lunar eclipse: Principle of computation. 4. Lunar eclipse computation: Vāsiṣṭha and Pauliṣa. 5. —Saurasiddhānta. 6. —Āryabhaṭīya. 7. —Āryabhaṭa's Midnight system. 8. —Emendation by Brahmagupta. 9. —Bhāskara I. 10. —Lalla. 11. —Bhāskara II. 12. —Karaṇaratna. 13. —Śrīpati. 14. —Vākyakaraṇa. 15. —Grahalāghava. 16. Lunar eclipse diagram: Vāsiṣṭha Pauliṣa. 17. —Āryabhaṭa's Midnight system. 18. —Bhāskara I. 19. —Lalla. 20. —Sūryasiddhānta. 21. —Bhāskara II. 22. —Karaṇaratna. 23. Solar eclipse: Computation: Pauliṣa. 24. —Romakasiddhānta. 25. —Saurasiddhānta. 26. —Āryabhaṭa's Midnight system. 27. —Bhāskara I. 28. —Lalla. 29. —Mahāsiddhānta. 30. —Bhāskara II. 31. —Karaṇaratna. 32. —Śrīpati. 33. —Grahalāghava. 34. —Solar eclipse diagram: Romakasiddhānta. 35. —Saurasiddhānta. 36. Colour of eclipses. 37. Conditions for non-prediction of eclipses. 38. —Inscriptional references: Lunar eclipses. 38. Solar eclipses.

##### 17. Phases of the Moon ... 241

1. Periodical appearance of the Moon. 2. Moon's luminosity. 3. Conditions of Moon's visibility. 4. Preliminaries for computation. 5. Visibility corrections: Ākṣa, Āyana and the Third. 6. Rising and setting of the Moon. 7. Moon's shadow. 8. Computation of Moon's cusps. 9. Moon's cusps—diagram.

##### 18. Heliacal rising and setting of Planets and Stars ... 254

1. Heliacal rising and setting of planets. 2. Days of rising and setting. 3. Planetary elongation for rising and setting. 4. Visibility corrections. 5. Computation of rising and setting. 6. Jupiter's rising and setting. 7. Venus: Rising and setting. 8. Rising and setting of a star. 9. Canopus: Rising.

##### 19. Conjunction of Planets ... 264

1. Types of planetary conjunctions. 2. Conjunction: Principle of computation. 3. Computation of conjunction.

##### 20. Conjunction of Stars and Planets ... 271

1. Conjunction of stars and planets. 2. Principle of planet-star conjunction. 3. Occultation of stars by planets. 4. Occultation of Rohiṇī by planets. 5. Occultation of stars by the Moon. 6. Time of star-planet conjunction.

#### V. INNOVATIVE TRENDS

##### 21. Novel Innovations ... 274

1. True longitude computation on the sphere of the zodiac. 2. Computation of True Moon. 3. Simplified astronomical procedures.

when the Amāvāsyā ends, if the Sun is in the western hemisphere, and subtracted, if in the eastern hemisphere. (The result is the time once corrected.) The longitudes of the Sun and the Moon must be found for this corrected time by adding or subtracting the minutes resulting (from the motions according as the parallax is additive or subtractive) and hence again the parallax. This process must be repeated (till the parallax and the time are fixed). (9)

When the Sun is on the meridian, the parallax, if any, should be added to the (calculated time) when the Amāvāsyā ends, provided that the Moon is to the south of the Sun. If the Sun is to the south of the Moon, the parallax should be subtracted. (10)

#### *Parallax in latitude*

Multiply the *dykkṣepaiyā* by 525 and divide severally by the distances of the Sun and Moon from the Earth. The difference of the results in minutes is called *nati* or parallax in latitude. Its direction is the same as that of the *madhyaiyā*.

Or, the *dykkṣepaiyā* multiplied by the differences in the true motions of the Sun and Moon and divided by 51,570 gives the parallax in latitude.

The latitude of the Moon increased or diminished by this parallax according as they are in the same or opposite directions, is the corrected latitude. (11)

#### *Application of the parallaxes*

Calculate the first and second half of the duration of the eclipse and of the total eclipse, following the method given for the lunar eclipse. From the corrected time when the Amāvāsyā ends subtract the first and add to it the second half of the duration of the eclipse. (The results are approximately the times when the eclipse begins and ends, respectively.) Then, from these times calculate the parallax at the beginning and end of the eclipse, and apply them (in the manner given in the next two verses) to the approximately calculated half durations.

Repeat the process till these times are fixed, (which are then the apparent or *sphuṭa* durations of the first and second halves of the eclipse). (12)

If the parallax for the beginning of the eclipse is greater than that for the middle of the eclipse and both are subtractive, and if the parallax for the end of the eclipse is less than that for the middle of the eclipse and both are subtractive, add their differences to the approximately calculated first and second half of the duration of the eclipse.

If the parallax for the beginning of the eclipse is less than that for the middle of the eclipse and both are

additive, and if the parallax for the end of the eclipse is greater than that for the middle of the eclipse and both are additive, then also add their differences respectively to the approximately calculated first and second half of the duration of the eclipse.

If the parallax for the beginning of the eclipse is less than that for the middle of the eclipse and both are subtractive, and if the parallax for the end of the eclipse is greater than for the middle of the eclipse and both are subtractive, then, subtract their differences respectively from the first and second half of the duration of the eclipse.

If the parallax for the beginning of the eclipse is greater than that for the middle of the eclipse and both are additive, and if the parallax for the end of the eclipse is less than that of the middle of the eclipse and both are additive, then also subtract their differences respectively from the first and second half of the duration of the eclipse.

If the parallax for the beginning of the eclipse is different in denomination from that for the middle of the eclipse or if the parallax for the end of the eclipse is different in denomination from that for the middle of the eclipse, then always add their sums to the first or second half of the duration of the eclipse (as the case may be). The result in each case is the apparent (*sphuṭa*) half duration of the eclipse.

If there is parallax when *dykkṣepa* and *dyggati* are equal it should be added to the half duration of the eclipse. (13-14)

#### *Computation of the eclipse*

The same rule is applicable for calculating the first and second half of the duration of the total eclipse. When the apparent duration for the first half and the second half of the eclipse are respectively subtracted or added to the apparent time when the Amāvāsyā ends, (the results are the apparent times for the beginning and end of the eclipse, respectively).

Then calculate the Moon's correct latitude at these times in the same manner as the latitude at the mid-eclipse is calculated.

When the obscured portion at any given time is required, calculate the Moon's correct latitude for that time, and this is the *koṭi* or perpendicular. (15)

Then calculate the *bāhu* or base (as above). Multiply it by the (approximately calculated first or second) half of the duration of the eclipse, as the case may be, using the corrected latitude, and divide by the apparent duration of the first or second half. The result is the

#### IV. OCCULTATION

##### 16. Eclipses ... 196

1. Cause stated in the Ṛgveda. 2. Cause of the lunar eclipse. 3. Lunar eclipse: Principle of computation. 4. Lunar eclipse computation: Vāsiṣṭha and Pauliṣa. 5. —Saurasiddhānta. 6. —Āryabhaṭīya. 7. —Āryabhaṭa's Midnight system. 8. —Emendation by Brahmagupta. 9. —Bhāskara I. 10. —Lalla. 11. —Bhāskara II. 12. —Karaṇaratna. 13. —Śrīpati. 14. —Vākyakaraṇa. 15. —Grahalāghava. 16. Lunar eclipse diagram: Vāsiṣṭha Pauliṣa. 17. —Āryabhaṭa's Midnight system. 18. —Bhāskara I. 19. —Lalla. 20. —Sūryasiddhānta. 21. —Bhāskara II. 22. —Karaṇaratna. 23. Solar eclipse: Computation: Pauliṣa. 24. —Romakasiddhānta. 25. —Saurasiddhānta. 26. —Āryabhaṭa's Midnight system. 27. —Bhāskara I. 28. —Lalla. 29. —Mahāsiddhānta. 30. —Bhāskara II. 31. —Karaṇaratna. 32. —Śrīpati. 33. —Grahalāghava. 34. —Solar eclipse diagram: Romakasiddhānta. 35. —Saurasiddhānta. 36. Colour of eclipses. 37. Conditions for non-prediction of eclipses. 38. —Inscriptional references: Lunar eclipses. 38. Solar eclipses.

##### 17. Phases of the Moon ... 241

1. Periodical appearance of the Moon. 2. Moon's luminosity. 3. Conditions of Moon's visibility. 4. Preliminaries for computation. 5. Visibility corrections: Ākṣa, Āyana and the Third. 6. Rising and setting of the Moon. 7. Moon's shadow. 8. Computation of Moon's cusps. 9. Moon's cusps—diagram.

##### 18. Heliacal rising and setting of Planets and Stars ... 254

1. Heliacal rising and setting of planets. 2. Days of rising and setting. 3. Planetary elongation for rising and setting. 4. Visibility corrections. 5. Computation of rising and setting. 6. Jupiter's rising and setting. 7. Venus: Rising and setting. 8. Rising and setting of a star. 9. Canopus: Rising.

##### 19. Conjunction of Planets ... 264

1. Types of planetary conjunctions. 2. Conjunction: Principle of computation. 3. Computation of conjunction.

##### 20. Conjunction of Stars and Planets ... 271

1. Conjunction of stars and planets. 2. Principle of planet-star conjunction. 3. Occultation of stars by planets. 4. Occultation of Rohiṇī by planets. 5. Occultation of stars by the Moon. 6. Time of star-planet conjunction.

#### V. INNOVATIVE TRENDS

##### 21. Novel Innovations ... 274

1. True longitude computation on the sphere of the zodiac. 2. Computation of True Moon. 3. Simplified astronomical procedures.

#### IV. OCCULTATION

##### 16. Eclipses ... 196

1. Cause stated in the Ṛgveda. 2. Cause of the lunar eclipse. 3. Lunar eclipse: Principle of computation. 4. Lunar eclipse computation: Vāsiṣṭha and Pauliṣa. 5. —Saurasiddhānta. 6. —Āryabhaṭīya. 7. —Āryabhaṭa's Midnight system. 8. —Emendation by Brahmagupta. 9. —Bhāskara I. 10. —Lalla. 11. —Bhāskara II. 12. —Karaṇaratna. 13. —Śrīpati. 14. —Vākyakaraṇa. 15. —Grahalāghava. 16. Lunar eclipse diagram: Vāsiṣṭha Pauliṣa. 17. —Āryabhaṭa's Midnight system. 18. —Bhāskara I. 19. —Lalla. 20. —Sūryasiddhānta. 21. —Bhāskara II. 22. —Karaṇaratna. 23. Solar eclipse: Computation: Pauliṣa. 24. —Romakasiddhānta. 25. —Saurasiddhānta. 26. —Āryabhaṭa's Midnight system. 27. —Bhāskara I. 28. —Lalla. 29. —Mahāsiddhānta. 30. —Bhāskara II. 31. —Karaṇaratna. 32. —Śrīpati. 33. —Grahalāghava. 34. —Solar eclipse diagram: Romakasiddhānta. 35. —Saurasiddhānta. 36. Colour of eclipses. 37. Conditions for non-prediction of eclipses. 38. —Inscriptional references: Lunar eclipses. 38. Solar eclipses.

##### 17. Phases of the Moon ... 241

1. Periodical appearance of the Moon. 2. Moon's luminosity. 3. Conditions of Moon's visibility. 4. Preliminaries for computation. 5. Visibility corrections: Ākṣa, Āyana and the Third. 6. Rising and setting of the Moon. 7. Moon's shadow. 8. Computation of Moon's cusps. 9. Moon's cusps—diagram.

##### 18. Heliacal rising and setting of Planets and Stars ... 254

1. Heliacal rising and setting of planets. 2. Days of rising and setting. 3. Planetary elongation for rising and setting. 4. Visibility corrections. 5. Computation of rising and setting. 6. Jupiter's rising and setting. 7. Venus: Rising and setting. 8. Rising and setting of a star. 9. Canopus: Rising.

##### 19. Conjunction of Planets ... 264

1. Types of planetary conjunctions. 2. Conjunction: Principle of computation. 3. Computation of conjunction.

##### 20. Conjunction of Stars and Planets ... 271

1. Conjunction of stars and planets. 2. Principle of planet-star conjunction. 3. Occultation of stars by planets. 4. Occultation of Rohiṇī by planets. 5. Occultation of stars by the Moon. 6. Time of star-planet conjunction.

#### V. INNOVATIVE TRENDS

##### 21. Novel Innovations ... 274

1. True longitude computation on the sphere of the zodiac. 2. Computation of True Moon. 3. Simplified astronomical procedures.

#### IV. OCCULTATION

##### 16. Eclipses ... 196

1. Cause stated in the Ṛgveda. 2. Cause of the lunar eclipse. 3. Lunar eclipse: Principle of computation. 4. Lunar eclipse computation: Vāsiṣṭha and Pauliṣa. 5. —Saurasiddhānta. 6. —Āryabhaṭīya. 7. —Āryabhaṭa's Midnight system. 8. —Emendation by Brahmagupta. 9. —Bhāskara I. 10. —Lalla. 11. —Bhāskara II. 12. —Karaṇaratna. 13. —Śrīpati. 14. —Vākyakaraṇa. 15. —Grahalāghava. 16. Lunar eclipse diagram: Vāsiṣṭha Pauliṣa. 17. —Āryabhaṭa's Midnight system. 18. —Bhāskara I. 19. —Lalla. 20. —Sūryasiddhānta. 21. —Bhāskara II. 22. —Karaṇaratna. 23. Solar eclipse: Computation: Pauliṣa. 24. —Romakasiddhānta. 25. —Saurasiddhānta. 26. —Āryabhaṭa's Midnight system. 27. —Bhāskara I. 28. —Lalla. 29. —Mahāsiddhānta. 30. —Bhāskara II. 31. —Karaṇaratna. 32. —Śrīpati. 33. —Grahalāghava. 34. —Solar eclipse diagram: Romakasiddhānta. 35. —Saurasiddhānta. 36. Colour of eclipses. 37. Conditions for non-prediction of eclipses. 38. —Inscriptional references: Lunar eclipses. 38. Solar eclipses.

##### 17. Phases of the Moon ... 241

1. Periodical appearance of the Moon. 2. Moon's luminosity. 3. Conditions of Moon's visibility. 4. Preliminaries for computation. 5. Visibility corrections: Ākṣa, Āyana and the Third. 6. Rising and setting of the Moon. 7. Moon's shadow. 8. Computation of Moon's cusps. 9. Moon's cusps—diagram.

##### 18. Heliacal rising and setting of Planets and Stars ... 254

1. Heliacal rising and setting of planets. 2. Days of rising and setting. 3. Planetary elongation for rising and setting. 4. Visibility corrections. 5. Computation of rising and setting. 6. Jupiter's rising and setting. 7. Venus: Rising and setting. 8. Rising and setting of a star. 9. Canopus: Rising.

##### 19. Conjunction of Planets ... 264

1. Types of planetary conjunctions. 2. Conjunction: Principle of computation. 3. Computation of conjunction.

##### 20. Conjunction of Stars and Planets ... 271

1. Conjunction of stars and planets. 2. Principle of planet-star conjunction. 3. Occultation of stars by planets. 4. Occultation of Rohiṇī by planets. 5. Occultation of stars by the Moon. 6. Time of star-planet conjunction.

#### V. INNOVATIVE TRENDS

##### 21. Novel Innovations ... 274

1. True longitude computation on the sphere of the zodiac. 2. Computation of True Moon. 3. Simplified astronomical procedures.

#### IV. OCCULTATION

##### 16. Eclipses ... 196

1. Cause stated in the Ṛgveda. 2. Cause of the lunar eclipse. 3. Lunar eclipse: Principle of computation. 4. Lunar eclipse computation: Vāsiṣṭha and Pauliṣa. 5. —Saurasiddhānta. 6. —Āryabhaṭīya. 7. —Āryabhaṭa's Midnight system. 8. —Emendation by Brahmagupta. 9. —Bhāskara I. 10. —Lalla. 11. —Bhāskara II. 12. —Karaṇaratna. 13. —Śrīpati. 14. —Vākyakaraṇa. 15. —Grahalāghava. 16. Lunar eclipse diagram: Vāsiṣṭha Pauliṣa. 17. —Āryabhaṭa's Midnight system. 18. —Bhāskara I. 19. —Lalla. 20. —Sūryasiddhānta. 21. —Bhāskara II. 22. —Karaṇaratna. 23. Solar eclipse: Computation: Pauliṣa. 24. —Romakasiddhānta. 25. —Saurasiddhānta. 26. —Āryabhaṭa's Midnight system. 27. —Bhāskara I. 28. —Lalla. 29. —Mahāsiddhānta. 30. —Bhāskara II. 31. —Karaṇaratna. 32. —Śrīpati. 33. —Grahalāghava. 34. —Solar eclipse diagram: Romakasiddhānta. 35. —Saurasiddhānta. 36. Colour of eclipses. 37. Conditions for non-prediction of eclipses. 38. —Inscriptional references: Lunar eclipses. 38. Solar eclipses.

##### 17. Phases of the Moon ... 241

1. Periodical appearance of the Moon. 2. Moon's luminosity. 3. Conditions of Moon's visibility. 4. Preliminaries for computation. 5. Visibility corrections: Ākṣa, Āyana and the Third. 6. Rising and setting of the Moon. 7. Moon's shadow. 8. Computation of Moon's cusps. 9. Moon's cusps—diagram.

##### 18. Heliacal rising and setting of Planets and Stars ... 254

1. Heliacal rising and setting of planets. 2. Days of rising and setting. 3. Planetary elongation for rising and setting. 4. Visibility corrections. 5. Computation of rising and setting. 6. Jupiter's rising and setting. 7. Venus: Rising and setting. 8. Rising and setting of a star. 9. Canopus: Rising.

##### 19. Conjunction of Planets ... 264

1. Types of planetary conjunctions. 2. Conjunction: Principle of computation. 3. Computation of conjunction.

##### 20. Conjunction of Stars and Planets ... 271

1. Conjunction of stars and planets. 2. Principle of planet-star conjunction. 3. Occultation of stars by planets. 4. Occultation of Rohiṇī by planets. 5. Occultation of stars by the Moon. 6. Time of star-planet conjunction.

#### V. INNOVATIVE TRENDS

##### 21. Novel Innovations ... 274

1. True longitude computation on the sphere of the zodiac. 2. Computation of True Moon. 3. Simplified astronomical procedures.

#### IV. OCCULTATION

##### 16. Eclipses ... 196

1. Cause stated in the Ṛgveda. 2. Cause of the lunar eclipse. 3. Lunar eclipse: Principle of computation. 4. Lunar eclipse computation: Vāsiṣṭha and Pauliṣa. 5. —Saurasiddhānta. 6. —Āryabhaṭīya. 7. —Āryabhaṭa's Midnight system. 8. —Emendation by Brahmagupta. 9. —Bhāskara I. 10. —Lalla. 11. —Bhāskara II. 12. —Karaṇaratna. 13. —Śrīpati. 14. —Vākyakaraṇa. 15. —Grahalāghava. 16. Lunar eclipse diagram: Vāsiṣṭha Pauliṣa. 17. —Āryabhaṭa's Midnight system. 18. —Bhāskara I. 19. —Lalla. 20. —Sūryasiddhānta. 21. —Bhāskara II. 22. —Karaṇaratna. 23. Solar eclipse: Computation: Pauliṣa. 24. —Romakasiddhānta. 25. —Saurasiddhānta. 26. —Āryabhaṭa's Midnight system. 27. —Bhāskara I. 28. —Lalla. 29. —Mahāsiddhānta. 30. —Bhāskara II. 31. —Karaṇaratna. 32. —Śrīpati. 33. —Grahalāghava. 34. —Solar eclipse diagram: Romakasiddhānta. 35. —Saurasiddhānta. 36. Colour of eclipses. 37. Conditions for non-prediction of eclipses. 38. —Inscriptional references: Lunar eclipses. 38. Solar eclipses.

##### 17. Phases of the Moon ... 241

1. Periodical appearance of the Moon. 2. Moon's luminosity. 3. Conditions of Moon's visibility. 4. Preliminaries for computation. 5. Visibility corrections: Ākṣa, Āyana and the Third. 6. Rising and setting of the Moon. 7. Moon's shadow. 8. Computation of Moon's cusps. 9. Moon's cusps—diagram.

##### 18. Heliacal rising and setting of Planets and Stars ... 254

1. Heliacal rising and setting of planets. 2. Days of rising and setting. 3. Planetary elongation for rising and setting. 4. Visibility corrections. 5. Computation of rising and setting. 6. Jupiter's rising and setting. 7. Venus: Rising and setting. 8. Rising and setting of a star. 9. Canopus: Rising.

##### 19. Conjunction of Planets ... 264

1. Types of planetary conjunctions. 2. Conjunction: Principle of computation. 3. Computation of conjunction.

##### 20. Conjunction of Stars and Planets ... 271

1. Conjunction of stars and planets. 2. Principle of planet-star conjunction. 3. Occultation of stars by planets. 4. Occultation of Rohiṇī by planets. 5. Occultation of stars by the Moon. 6. Time of star-planet conjunction.

#### V. INNOVATIVE TRENDS

##### 21. Novel Innovations ... 274

1. True longitude computation on the sphere of the zodiac. 2. Computation of True Moon. 3. Simplified astronomical procedures.

#### IV. OCCULTATION

##### 16. Eclipses ... 196

1. Cause stated in the Ṛgveda. 2. Cause of the lunar eclipse. 3. Lunar eclipse: Principle of computation. 4. Lunar eclipse computation: Vāsiṣṭha and Pauliṣa. 5. —Saurasiddhānta. 6. —Āryabhaṭīya. 7. —Āryabhaṭa's Midnight system. 8. —Emendation by Brahmagupta. 9. —Bhāskara I. 10. —Lalla. 11. —Bhāskara II. 12. —Karaṇaratna. 13. —Śrīpati. 14. —Vākyakaraṇa. 15. —Grahalāghava. 16. Lunar eclipse diagram: Vāsiṣṭha Pauliṣa. 17. —Āryabhaṭa's Midnight system. 18. —Bhāskara I. 19. —Lalla. 20. —Sūryasiddhānta. 21. —Bhāskara II. 22. —Karaṇaratna. 23. Solar eclipse: Computation: Pauliṣa. 24. —Romakasiddhānta. 25. —Saurasiddhānta. 26. —Āryabhaṭa's Midnight system. 27. —Bhāskara I. 28. —Lalla. 29. —Mahāsiddhānta. 30. —Bhāskara II. 31. —Karaṇaratna. 32. —Śrīpati. 33. —Grahalāghava. 34. —Solar eclipse diagram: Romakasiddhānta. 35. —Saurasiddhānta. 36. Colour of eclipses. 37. Conditions for non-prediction of eclipses. 38. —Inscriptional references: Lunar eclipses. 38. Solar eclipses.

##### 17. Phases of the Moon ... 241

1. Periodical appearance of the Moon. 2. Moon's luminosity. 3. Conditions of Moon's visibility. 4. Preliminaries for computation. 5. Visibility corrections: Ākṣa, Āyana and the Third. 6. Rising and setting of the Moon. 7. Moon's shadow. 8. Computation of Moon's cusps. 9. Moon's cusps—diagram.

##### 18. Heliacal rising and setting of Planets and Stars ... 254

1. Heliacal rising and setting of planets. 2. Days of rising and setting. 3. Planetary elongation for rising and setting. 4. Visibility corrections. 5. Computation of rising and setting. 6. Jupiter's rising and setting. 7. Venus: Rising and setting. 8. Rising and setting of a star. 9. Canopus: Rising.

##### 19. Conjunction of Planets ... 264

1. Types of planetary conjunctions. 2. Conjunction: Principle of computation. 3. Computation of conjunction.

##### 20. Conjunction of Stars and Planets ... 271

1. Conjunction of stars and planets. 2. Principle of planet-star conjunction. 3. Occultation of stars by planets. 4. Occultation of Rohiṇī by planets. 5. Occultation of stars by the Moon. 6. Time of star-planet conjunction.

#### V. INNOVATIVE TRENDS

##### 21. Novel Innovations ... 274

1. True longitude computation on the sphere of the zodiac. 2. Computation of True Moon. 3. Simplified astronomical procedures.



#### IV. OCCULTATION

##### 16. Eclipses ... 196

1. Cause stated in the Ṛgveda. 2. Cause of the lunar eclipse. 3. Lunar eclipse: Principle of computation. 4. Lunar eclipse computation: Vāsiṣṭha and Pauliṣa. 5. —Saurasiddhānta. 6. —Āryabhaṭīya. 7. —Āryabhaṭa's Midnight system. 8. —Emendation by Brahmagupta. 9. —Bhāskara I. 10. —Lalla. 11. —Bhāskara II. 12. —Karaṇaratna. 13. —Śrīpati. 14. —Vākyakaraṇa. 15. —Grahalāghava. 16. Lunar eclipse diagram: Vāsiṣṭha Pauliṣa. 17. —Āryabhaṭa's Midnight system. 18. —Bhāskara I. 19. —Lalla. 20. —Sūryasiddhānta. 21. —Bhāskara II. 22. —Karaṇaratna. 23. Solar eclipse: Computation: Pauliṣa. 24. —Romakasiddhānta. 25. —Saurasiddhānta. 26. —Āryabhaṭa's Midnight system. 27. —Bhāskara I. 28. —Lalla. 29. —Mahāsiddhānta. 30. —Bhāskara II. 31. —Karaṇaratna. 32. —Śrīpati. 33. —Grahalāghava. 34. —Solar eclipse diagram: Romakasiddhānta. 35. —Saurasiddhānta. 36. Colour of eclipses. 37. Conditions for non-prediction of eclipses. 38. —Inscriptional references: Lunar eclipses. 38. Solar eclipses.

##### 17. Phases of the Moon ... 241

1. Periodical appearance of the Moon. 2. Moon's luminosity. 3. Conditions of Moon's visibility. 4. Preliminaries for computation. 5. Visibility corrections: Ākṣa, Āyana and the Third. 6. Rising and setting of the Moon. 7. Moon's shadow. 8. Computation of Moon's cusps. 9. Moon's cusps—diagram.

##### 18. Heliacal rising and setting of Planets and Stars ... 254

1. Heliacal rising and setting of planets. 2. Days of rising and setting. 3. Planetary elongation for rising and setting. 4. Visibility corrections. 5. Computation of rising and setting. 6. Jupiter's rising and setting. 7. Venus: Rising and setting. 8. Rising and setting of a star. 9. Canopus: Rising.

##### 19. Conjunction of Planets ... 264

1. Types of planetary conjunctions. 2. Conjunction: Principle of computation. 3. Computation of conjunction.

##### 20. Conjunction of Stars and Planets ... 271

1. Conjunction of stars and planets. 2. Principle of planet-star conjunction. 3. Occultation of stars by planets. 4. Occultation of Rohiṇī by planets. 5. Occultation of stars by the Moon. 6. Time of star-planet conjunction.

#### V. INNOVATIVE TRENDS

##### 21. Novel Innovations ... 274

1. True longitude computation on the sphere of the zodiac. 2. Computation of True Moon. 3. Simplified astronomical procedures.

#### IV. OCCULTATION

##### 16. Eclipses ... 196

1. Cause stated in the Ṛgveda. 2. Cause of the lunar eclipse. 3. Lunar eclipse: Principle of computation. 4. Lunar eclipse computation: Vāsiṣṭha and Pauliṣa. 5. —Saurasiddhānta. 6. —Āryabhaṭīya. 7. —Āryabhaṭa's Midnight system. 8. —Emendation by Brahmagupta. 9. —Bhāskara I. 10. —Lalla. 11. —Bhāskara II. 12. —Karaṇaratna. 13. —Śrīpati. 14. —Vākyakaraṇa. 15. —Grahalāghava. 16. Lunar eclipse diagram: Vāsiṣṭha Pauliṣa. 17. —Āryabhaṭa's Midnight system. 18. —Bhāskara I. 19. —Lalla. 20. —Sūryasiddhānta. 21. —Bhāskara II. 22. —Karaṇaratna. 23. Solar eclipse: Computation: Pauliṣa. 24. —Romakasiddhānta. 25. —Saurasiddhānta. 26. —Āryabhaṭa's Midnight system. 27. —Bhāskara I. 28. —Lalla. 29. —Mahāsiddhānta. 30. —Bhāskara II. 31. —Karaṇaratna. 32. —Śrīpati. 33. —Grahalāghava. 34. —Solar eclipse diagram: Romakasiddhānta. 35. —Saurasiddhānta. 36. Colour of eclipses. 37. Conditions for non-prediction of eclipses. 38. —Inscriptional references: Lunar eclipses. 38. Solar eclipses.

##### 17. Phases of the Moon ... 241

1. Periodical appearance of the Moon. 2. Moon's luminosity. 3. Conditions of Moon's visibility. 4. Preliminaries for computation. 5. Visibility corrections: Ākṣa, Āyana and the Third. 6. Rising and setting of the Moon. 7. Moon's shadow. 8. Computation of Moon's cusps. 9. Moon's cusps—diagram.

##### 18. Heliacal rising and setting of Planets and Stars ... 254

1. Heliacal rising and setting of planets. 2. Days of rising and setting. 3. Planetary elongation for rising and setting. 4. Visibility corrections. 5. Computation of rising and setting. 6. Jupiter's rising and setting. 7. Venus: Rising and setting. 8. Rising and setting of a star. 9. Canopus: Rising.

##### 19. Conjunction of Planets ... 264

1. Types of planetary conjunctions. 2. Conjunction: Principle of computation. 3. Computation of conjunction.

##### 20. Conjunction of Stars and Planets ... 271

1. Conjunction of stars and planets. 2. Principle of planet-star conjunction. 3. Occultation of stars by planets. 4. Occultation of Rohiṇī by planets. 5. Occultation of stars by the Moon. 6. Time of star-planet conjunction.

#### V. INNOVATIVE TRENDS

##### 21. Novel Innovations ... 274

1. True longitude computation on the sphere of the zodiac. 2. Computation of True Moon. 3. Simplified astronomical procedures.

#### IV. OCCULTATION

##### 16. Eclipses ... 196

1. Cause stated in the Ṛgveda. 2. Cause of the lunar eclipse. 3. Lunar eclipse: Principle of computation. 4. Lunar eclipse computation: Vāsiṣṭha and Pauliṣa. 5. —Saurasiddhānta. 6. —Āryabhaṭīya. 7. —Āryabhaṭa's Midnight system. 8. —Emendation by Brahmagupta. 9. —Bhāskara I. 10. —Lalla. 11. —Bhāskara II. 12. —Karaṇaratna. 13. —Śrīpati. 14. —Vākyakaraṇa. 15. —Grahalāghava. 16. Lunar eclipse diagram: Vāsiṣṭha Pauliṣa. 17. —Āryabhaṭa's Midnight system. 18. —Bhāskara I. 19. —Lalla. 20. —Sūryasiddhānta. 21. —Bhāskara II. 22. —Karaṇaratna. 23. Solar eclipse: Computation: Pauliṣa. 24. —Romakasiddhānta. 25. —Saurasiddhānta. 26. —Āryabhaṭa's Midnight system. 27. —Bhāskara I. 28. —Lalla. 29. —Mahāsiddhānta. 30. —Bhāskara II. 31. —Karaṇaratna. 32. —Śrīpati. 33. —Grahalāghava. 34. —Solar eclipse diagram: Romakasiddhānta. 35. —Saurasiddhānta. 36. Colour of eclipses. 37. Conditions for non-prediction of eclipses. 38. —Inscriptional references: Lunar eclipses. 38. Solar eclipses.

##### 17. Phases of the Moon ... 241

1. Periodical appearance of the Moon. 2. Moon's luminosity. 3. Conditions of Moon's visibility. 4. Preliminaries for computation. 5. Visibility corrections: Ākṣa, Āyana and the Third. 6. Rising and setting of the Moon. 7. Moon's shadow. 8. Computation of Moon's cusps. 9. Moon's cusps—diagram.

##### 18. Heliacal rising and setting of Planets and Stars ... 254

1. Heliacal rising and setting of planets. 2. Days of rising and setting. 3. Planetary elongation for rising and setting. 4. Visibility corrections. 5. Computation of rising and setting. 6. Jupiter's rising and setting. 7. Venus: Rising and setting. 8. Rising and setting of a star. 9. Canopus: Rising.

##### 19. Conjunction of Planets ... 264

1. Types of planetary conjunctions. 2. Conjunction: Principle of computation. 3. Computation of conjunction.

##### 20. Conjunction of Stars and Planets ... 271

1. Conjunction of stars and planets. 2. Principle of planet-star conjunction. 3. Occultation of stars by planets. 4. Occultation of Rohiṇī by planets. 5. Occultation of stars by the Moon. 6. Time of star-planet conjunction.

#### V. INNOVATIVE TRENDS

##### 21. Novel Innovations ... 274

1. True longitude computation on the sphere of the zodiac. 2. Computation of True Moon. 3. Simplified astronomical procedures.

#### IV. OCCULTATION

##### 16. Eclipses ... 196

1. Cause stated in the Ṛgveda. 2. Cause of the lunar eclipse. 3. Lunar eclipse: Principle of computation. 4. Lunar eclipse computation: Vāsiṣṭha and Pauliṣa. 5. —Saurasiddhānta. 6. —Āryabhaṭīya. 7. —Āryabhaṭa's Midnight system. 8. —Emendation by Brahmagupta. 9. —Bhāskara I. 10. —Lalla. 11. —Bhāskara II. 12. —Karaṇaratna. 13. —Śrīpati. 14. —Vākyakaraṇa. 15. —Grahalāghava. 16. Lunar eclipse diagram: Vāsiṣṭha Pauliṣa. 17. —Āryabhaṭa's Midnight system. 18. —Bhāskara I. 19. —Lalla. 20. —Sūryasiddhānta. 21. —Bhāskara II. 22. —Karaṇaratna. 23. Solar eclipse: Computation: Pauliṣa. 24. —Romakasiddhānta. 25. —Saurasiddhānta. 26. —Āryabhaṭa's Midnight system. 27. —Bhāskara I. 28. —Lalla. 29. —Mahāsiddhānta. 30. —Bhāskara II. 31. —Karaṇaratna. 32. —Śrīpati. 33. —Grahalāghava. 34. —Solar eclipse diagram: Romakasiddhānta. 35. —Saurasiddhānta. 36. Colour of eclipses. 37. Conditions for non-prediction of eclipses. 38. —Inscriptional references: Lunar eclipses. 38. Solar eclipses.

##### 17. Phases of the Moon ... 241

1. Periodical appearance of the Moon. 2. Moon's luminosity. 3. Conditions of Moon's visibility. 4. Preliminaries for computation. 5. Visibility corrections: Ākṣa, Āyana and the Third. 6. Rising and setting of the Moon. 7. Moon's shadow. 8. Computation of Moon's cusps. 9. Moon's cusps—diagram.

##### 18. Heliacal rising and setting of Planets and Stars ... 254

1. Heliacal rising and setting of planets. 2. Days of rising and setting. 3. Planetary elongation for rising and setting. 4. Visibility corrections. 5. Computation of rising and setting. 6. Jupiter's rising and setting. 7. Venus: Rising and setting. 8. Rising and setting of a star. 9. Canopus: Rising.

##### 19. Conjunction of Planets ... 264

1. Types of planetary conjunctions. 2. Conjunction: Principle of computation. 3. Computation of conjunction.

##### 20. Conjunction of Stars and Planets ... 271

1. Conjunction of stars and planets. 2. Principle of planet-star conjunction. 3. Occultation of stars by planets. 4. Occultation of Rohiṇī by planets. 5. Occultation of stars by the Moon. 6. Time of star-planet conjunction.

#### V. INNOVATIVE TRENDS

##### 21. Novel Innovations ... 274

1. True longitude computation on the sphere of the zodiac. 2. Computation of True Moon. 3. Simplified astronomical procedures.

#### IV. OCCULTATION

##### 16. Eclipses ... 196

1. Cause stated in the Ṛgveda. 2. Cause of the lunar eclipse. 3. Lunar eclipse: Principle of computation. 4. Lunar eclipse computation: Vāsiṣṭha and Pauliṣa. 5. —Saurasiddhānta. 6. —Āryabhaṭīya. 7. —Āryabhaṭa's Midnight system. 8. —Emendation by Brahmagupta. 9. —Bhāskara I. 10. —Lalla. 11. —Bhāskara II. 12. —Karaṇaratna. 13. —Śrīpati. 14. —Vākyakaraṇa. 15. —Grahalāghava. 16. Lunar eclipse diagram: Vāsiṣṭha Pauliṣa. 17. —Āryabhaṭa's Midnight system. 18. —Bhāskara I. 19. —Lalla. 20. —Sūryasiddhānta. 21. —Bhāskara II. 22. —Karaṇaratna. 23. Solar eclipse: Computation: Pauliṣa. 24. —Romakasiddhānta. 25. —Saurasiddhānta. 26. —Āryabhaṭa's Midnight system. 27. —Bhāskara I. 28. —Lalla. 29. —Mahāsiddhānta. 30. —Bhāskara II. 31. —Karaṇaratna. 32. —Śrīpati. 33. —Grahalāghava. 34. —Solar eclipse diagram: Romakasiddhānta. 35. —Saurasiddhānta. 36. Colour of eclipses. 37. Conditions for non-prediction of eclipses. 38. —Inscriptional references: Lunar eclipses. 38. Solar eclipses.

##### 17. Phases of the Moon ... 241

1. Periodical appearance of the Moon. 2. Moon's luminosity. 3. Conditions of Moon's visibility. 4. Preliminaries for computation. 5. Visibility corrections: Ākṣa, Āyana and the Third. 6. Rising and setting of the Moon. 7. Moon's shadow. 8. Computation of Moon's cusps. 9. Moon's cusps—diagram.

##### 18. Heliacal rising and setting of Planets and Stars ... 254

1. Heliacal rising and setting of planets. 2. Days of rising and setting. 3. Planetary elongation for rising and setting. 4. Visibility corrections. 5. Computation of rising and setting. 6. Jupiter's rising and setting. 7. Venus: Rising and setting. 8. Rising and setting of a star. 9. Canopus: Rising.

##### 19. Conjunction of Planets ... 264

1. Types of planetary conjunctions. 2. Conjunction: Principle of computation. 3. Computation of conjunction.

##### 20. Conjunction of Stars and Planets ... 271

1. Conjunction of stars and planets. 2. Principle of planet-star conjunction. 3. Occultation of stars by planets. 4. Occultation of Rohiṇī by planets. 5. Occultation of stars by the Moon. 6. Time of star-planet conjunction.

#### V. INNOVATIVE TRENDS

##### 21. Novel Innovations ... 274

1. True longitude computation on the sphere of the zodiac. 2. Computation of True Moon. 3. Simplified astronomical procedures.

#### IV. OCCULTATION

##### 16. Eclipses ... 196

1. Cause stated in the Ṛgveda. 2. Cause of the lunar eclipse. 3. Lunar eclipse: Principle of computation. 4. Lunar eclipse computation: Vāsiṣṭha and Pauliṣa. 5. —Saurasiddhānta. 6. —Āryabhaṭīya. 7. —Āryabhaṭa's Midnight system. 8. —Emendation by Brahmagupta. 9. —Bhāskara I. 10. —Lalla. 11. —Bhāskara II. 12. —Karaṇaratna. 13. —Śrīpati. 14. —Vākyakaraṇa. 15. —Grahalāghava. 16. Lunar eclipse diagram: Vāsiṣṭha Pauliṣa. 17. —Āryabhaṭa's Midnight system. 18. —Bhāskara I. 19. —Lalla. 20. —Sūryasiddhānta. 21. —Bhāskara II. 22. —Karaṇaratna. 23. Solar eclipse: Computation: Pauliṣa. 24. —Romakasiddhānta. 25. —Saurasiddhānta. 26. —Āryabhaṭa's Midnight system. 27. —Bhāskara I. 28. —Lalla. 29. —Mahāsiddhānta. 30. —Bhāskara II. 31. —Karaṇaratna. 32. —Śrīpati. 33. —Grahalāghava. 34. —Solar eclipse diagram: Romakasiddhānta. 35. —Saurasiddhānta. 36. Colour of eclipses. 37. Conditions for non-prediction of eclipses. 38. —Inscriptional references: Lunar eclipses. 38. Solar eclipses.

##### 17. Phases of the Moon ... 241

1. Periodical appearance of the Moon. 2. Moon's luminosity. 3. Conditions of Moon's visibility. 4. Preliminaries for computation. 5. Visibility corrections: Ākṣa, Āyana and the Third. 6. Rising and setting of the Moon. 7. Moon's shadow. 8. Computation of Moon's cusps. 9. Moon's cusps—diagram.

##### 18. Heliacal rising and setting of Planets and Stars ... 254

1. Heliacal rising and setting of planets. 2. Days of rising and setting. 3. Planetary elongation for rising and setting. 4. Visibility corrections. 5. Computation of rising and setting. 6. Jupiter's rising and setting. 7. Venus: Rising and setting. 8. Rising and setting of a star. 9. Canopus: Rising.

##### 19. Conjunction of Planets ... 264

1. Types of planetary conjunctions. 2. Conjunction: Principle of computation. 3. Computation of conjunction.

##### 20. Conjunction of Stars and Planets ... 271

1. Conjunction of stars and planets. 2. Principle of planet-star conjunction. 3. Occultation of stars by planets. 4. Occultation of Rohiṇī by planets. 5. Occultation of stars by the Moon. 6. Time of star-planet conjunction.

#### V. INNOVATIVE TRENDS

##### 21. Novel Innovations ... 274

1. True longitude computation on the sphere of the zodiac. 2. Computation of True Moon. 3. Simplified astronomical procedures.

#### IV. OCCULTATION

##### 16. Eclipses ... 196

1. Cause stated in the Ṛgveda. 2. Cause of the lunar eclipse. 3. Lunar eclipse: Principle of computation. 4. Lunar eclipse computation: Vāsiṣṭha and Pauliṣa. 5. —Saurasiddhānta. 6. —Āryabhaṭīya. 7. —Āryabhaṭa's Midnight system. 8. —Emendation by Brahmagupta. 9. —Bhāskara I. 10. —Lalla. 11. —Bhāskara II. 12. —Karaṇaratna. 13. —Śrīpati. 14. —Vākyakaraṇa. 15. —Grahalāghava. 16. Lunar eclipse diagram: Vāsiṣṭha Pauliṣa. 17. —Āryabhaṭa's Midnight system. 18. —Bhāskara I. 19. —Lalla. 20. —Sūryasiddhānta. 21. —Bhāskara II. 22. —Karaṇaratna. 23. Solar eclipse: Computation: Pauliṣa. 24. —Romakasiddhānta. 25. —Saurasiddhānta. 26. —Āryabhaṭa's Midnight system. 27. —Bhāskara I. 28. —Lalla. 29. —Mahāsiddhānta. 30. —Bhāskara II. 31. —Karaṇaratna. 32. —Śrīpati. 33. —Grahalāghava. 34. —Solar eclipse diagram: Romakasiddhānta. 35. —Saurasiddhānta. 36. Colour of eclipses. 37. Conditions for non-prediction of eclipses. 38. —Inscriptional references: Lunar eclipses. 38. Solar eclipses.

##### 17. Phases of the Moon ... 241

1. Periodical appearance of the Moon. 2. Moon's luminosity. 3. Conditions of Moon's visibility. 4. Preliminaries for computation. 5. Visibility corrections: Ākṣa, Āyana and the Third. 6. Rising and setting of the Moon. 7. Moon's shadow. 8. Computation of Moon's cusps. 9. Moon's cusps—diagram.

##### 18. Heliacal rising and setting of Planets and Stars ... 254

1. Heliacal rising and setting of planets. 2. Days of rising and setting. 3. Planetary elongation for rising and setting. 4. Visibility corrections. 5. Computation of rising and setting. 6. Jupiter's rising and setting. 7. Venus: Rising and setting. 8. Rising and setting of a star. 9. Canopus: Rising.

##### 19. Conjunction of Planets ... 264

1. Types of planetary conjunctions. 2. Conjunction: Principle of computation. 3. Computation of conjunction.

##### 20. Conjunction of Stars and Planets ... 271

1. Conjunction of stars and planets. 2. Principle of planet-star conjunction. 3. Occultation of stars by planets. 4. Occultation of Rohiṇī by planets. 5. Occultation of stars by the Moon. 6. Time of star-planet conjunction.

#### V. INNOVATIVE TRENDS

##### 21. Novel Innovations ... 274

1. True longitude computation on the sphere of the zodiac. 2. Computation of True Moon. 3. Simplified astronomical procedures.

#### IV. OCCULTATION

##### 16. Eclipses ... 196

1. Cause stated in the Ṛgveda. 2. Cause of the lunar eclipse. 3. Lunar eclipse: Principle of computation. 4. Lunar eclipse computation: Vāsiṣṭha and Pauliṣa. 5. —Saurasiddhānta. 6. —Āryabhaṭīya. 7. —Āryabhaṭa's Midnight system. 8. —Emendation by Brahmagupta. 9. —Bhāskara I. 10. —Lalla. 11. —Bhāskara II. 12. —Karaṇaratna. 13. —Śrīpati. 14. —Vākyakaraṇa. 15. —Grahalāghava. 16. Lunar eclipse diagram: Vāsiṣṭha Pauliṣa. 17. —Āryabhaṭa's Midnight system. 18. —Bhāskara I. 19. —Lalla. 20. —Sūryasiddhānta. 21. —Bhāskara II. 22. —Karaṇaratna. 23. Solar eclipse: Computation: Pauliṣa. 24. —Romakasiddhānta. 25. —Saurasiddhānta. 26. —Āryabhaṭa's Midnight system. 27. —Bhāskara I. 28. —Lalla. 29. —Mahāsiddhānta. 30. —Bhāskara II. 31. —Karaṇaratna. 32. —Śrīpati. 33. —Grahalāghava. 34. —Solar eclipse diagram: Romakasiddhānta. 35. —Saurasiddhānta. 36. Colour of eclipses. 37. Conditions for non-prediction of eclipses. 38. —Inscriptional references: Lunar eclipses. 38. Solar eclipses.

##### 17. Phases of the Moon ... 241

1. Periodical appearance of the Moon. 2. Moon's luminosity. 3. Conditions of Moon's visibility. 4. Preliminaries for computation. 5. Visibility corrections: Ākṣa, Āyana and the Third. 6. Rising and setting of the Moon. 7. Moon's shadow. 8. Computation of Moon's cusps. 9. Moon's cusps—diagram.

##### 18. Heliacal rising and setting of Planets and Stars ... 254

1. Heliacal rising and setting of planets. 2. Days of rising and setting. 3. Planetary elongation for rising and setting. 4. Visibility corrections. 5. Computation of rising and setting. 6. Jupiter's rising and setting. 7. Venus: Rising and setting. 8. Rising and setting of a star. 9. Canopus: Rising.

##### 19. Conjunction of Planets ... 264

1. Types of planetary conjunctions. 2. Conjunction: Principle of computation. 3. Computation of conjunction.

##### 20. Conjunction of Stars and Planets ... 271

1. Conjunction of stars and planets. 2. Principle of planet-star conjunction. 3. Occultation of stars by planets. 4. Occultation of Rohiṇī by planets. 5. Occultation of stars by the Moon. 6. Time of star-planet conjunction.

#### V. INNOVATIVE TRENDS

##### 21. Novel Innovations ... 274

1. True longitude computation on the sphere of the zodiac. 2. Computation of True Moon. 3. Simplified astronomical procedures.



#### IV. OCCULTATION

##### 16. Eclipses ... 196

1. Cause stated in the Ṛgveda. 2. Cause of the lunar eclipse. 3. Lunar eclipse: Principle of computation. 4. Lunar eclipse computation: Vāsiṣṭha and Pauliṣa. 5. —Saurasiddhānta. 6. —Āryabhaṭīya. 7. —Āryabhaṭa's Midnight system. 8. —Emendation by Brahmagupta. 9. —Bhāskara I. 10. —Lalla. 11. —Bhāskara II. 12. —Karaṇaratna. 13. —Śrīpati. 14. —Vākyakaraṇa. 15. —Grahalāghava. 16. Lunar eclipse diagram: Vāsiṣṭha Pauliṣa. 17. —Āryabhaṭa's Midnight system. 18. —Bhāskara I. 19. —Lalla. 20. —Sūryasiddhānta. 21. —Bhāskara II. 22. —Karaṇaratna. 23. Solar eclipse: Computation: Pauliṣa. 24. —Romakasiddhānta. 25. —Saurasiddhānta. 26. —Āryabhaṭa's Midnight system. 27. —Bhāskara I. 28. —Lalla. 29. —Mahāsiddhānta. 30. —Bhāskara II. 31. —Karaṇaratna. 32. —Śrīpati. 33. —Grahalāghava. 34. —Solar eclipse diagram: Romakasiddhānta. 35. —Saurasiddhānta. 36. Colour of eclipses. 37. Conditions for non-prediction of eclipses. 38. —Inscriptional references: Lunar eclipses. 38. Solar eclipses.

##### 17. Phases of the Moon ... 241

1. Periodical appearance of the Moon. 2. Moon's luminosity. 3. Conditions of Moon's visibility. 4. Preliminaries for computation. 5. Visibility corrections: Ākṣa, Āyana and the Third. 6. Rising and setting of the Moon. 7. Moon's shadow. 8. Computation of Moon's cusps. 9. Moon's cusps—diagram.

##### 18. Heliacal rising and setting of Planets and Stars ... 254

1. Heliacal rising and setting of planets. 2. Days of rising and setting. 3. Planetary elongation for rising and setting. 4. Visibility corrections. 5. Computation of rising and setting. 6. Jupiter's rising and setting. 7. Venus: Rising and setting. 8. Rising and setting of a star. 9. Canopus: Rising.

##### 19. Conjunction of Planets ... 264

1. Types of planetary conjunctions. 2. Conjunction: Principle of computation. 3. Computation of conjunction.

##### 20. Conjunction of Stars and Planets ... 271

1. Conjunction of stars and planets. 2. Principle of planet-star conjunction. 3. Occultation of stars by planets. 4. Occultation of Rohiṇī by planets. 5. Occultation of stars by the Moon. 6. Time of star-planet conjunction.

#### V. INNOVATIVE TRENDS

##### 21. Novel Innovations ... 274

1. True longitude computation on the sphere of the zodiac. 2. Computation of True Moon. 3. Simplified astronomical procedures.

#### IV. OCCULTATION

##### 16. Eclipses ... 196

1. Cause stated in the Ṛgveda. 2. Cause of the lunar eclipse. 3. Lunar eclipse: Principle of computation. 4. Lunar eclipse computation: Vāsiṣṭha and Pauliṣa. 5. —Saurasiddhānta. 6. —Āryabhaṭīya. 7. —Āryabhaṭa's Midnight system. 8. —Emendation by Brahmagupta. 9. —Bhāskara I. 10. —Lalla. 11. —Bhāskara II. 12. —Karaṇaratna. 13. —Śrīpati. 14. —Vākyakaraṇa. 15. —Grahalāghava. 16. Lunar eclipse diagram: Vāsiṣṭha Pauliṣa. 17. —Āryabhaṭa's Midnight system. 18. —Bhāskara I. 19. —Lalla. 20. —Sūryasiddhānta. 21. —Bhāskara II. 22. —Karaṇaratna. 23. Solar eclipse: Computation: Pauliṣa. 24. —Romakasiddhānta. 25. —Saurasiddhānta. 26. —Āryabhaṭa's Midnight system. 27. —Bhāskara I. 28. —Lalla. 29. —Mahāsiddhānta. 30. —Bhāskara II. 31. —Karaṇaratna. 32. —Śrīpati. 33. —Grahalāghava. 34. —Solar eclipse diagram: Romakasiddhānta. 35. —Saurasiddhānta. 36. Colour of eclipses. 37. Conditions for non-prediction of eclipses. 38. —Inscriptional references: Lunar eclipses. 38. Solar eclipses.

##### 17. Phases of the Moon ... 241

1. Periodical appearance of the Moon. 2. Moon's luminosity. 3. Conditions of Moon's visibility. 4. Preliminaries for computation. 5. Visibility corrections: Ākṣa, Āyana and the Third. 6. Rising and setting of the Moon. 7. Moon's shadow. 8. Computation of Moon's cusps. 9. Moon's cusps—diagram.

##### 18. Heliacal rising and setting of Planets and Stars ... 254

1. Heliacal rising and setting of planets. 2. Days of rising and setting. 3. Planetary elongation for rising and setting. 4. Visibility corrections. 5. Computation of rising and setting. 6. Jupiter's rising and setting. 7. Venus: Rising and setting. 8. Rising and setting of a star. 9. Canopus: Rising.

##### 19. Conjunction of Planets ... 264

1. Types of planetary conjunctions. 2. Conjunction: Principle of computation. 3. Computation of conjunction.

##### 20. Conjunction of Stars and Planets ... 271

1. Conjunction of stars and planets. 2. Principle of planet-star conjunction. 3. Occultation of stars by planets. 4. Occultation of Rohiṇī by planets. 5. Occultation of stars by the Moon. 6. Time of star-planet conjunction.

#### V. INNOVATIVE TRENDS

##### 21. Novel Innovations ... 274

1. True longitude computation on the sphere of the zodiac. 2. Computation of True Moon. 3. Simplified astronomical procedures.

#### IV. OCCULTATION

##### 16. Eclipses ... 196

1. Cause stated in the Ṛgveda. 2. Cause of the lunar eclipse. 3. Lunar eclipse: Principle of computation. 4. Lunar eclipse computation: Vāsiṣṭha and Pauliṣa. 5. —Saurasiddhānta. 6. —Āryabhaṭīya. 7. —Āryabhaṭa's Midnight system. 8. —Emendation by Brahmagupta. 9. —Bhāskara I. 10. —Lalla. 11. —Bhāskara II. 12. —Karaṇaratna. 13. —Śrīpati. 14. —Vākyakaraṇa. 15. —Grahalāghava. 16. Lunar eclipse diagram: Vāsiṣṭha Pauliṣa. 17. —Āryabhaṭa's Midnight system. 18. —Bhāskara I. 19. —Lalla. 20. —Sūryasiddhānta. 21. —Bhāskara II. 22. —Karaṇaratna. 23. Solar eclipse: Computation: Pauliṣa. 24. —Romakasiddhānta. 25. —Saurasiddhānta. 26. —Āryabhaṭa's Midnight system. 27. —Bhāskara I. 28. —Lalla. 29. —Mahāsiddhānta. 30. —Bhāskara II. 31. —Karaṇaratna. 32. —Śrīpati. 33. —Grahalāghava. 34. —Solar eclipse diagram: Romakasiddhānta. 35. —Saurasiddhānta. 36. Colour of eclipses. 37. Conditions for non-prediction of eclipses. 38. —Inscriptional references: Lunar eclipses. 38. Solar eclipses.

##### 17. Phases of the Moon ... 241

1. Periodical appearance of the Moon. 2. Moon's luminosity. 3. Conditions of Moon's visibility. 4. Preliminaries for computation. 5. Visibility corrections: Ākṣa, Āyana and the Third. 6. Rising and setting of the Moon. 7. Moon's shadow. 8. Computation of Moon's cusps. 9. Moon's cusps—diagram.

##### 18. Heliacal rising and setting of Planets and Stars ... 254

1. Heliacal rising and setting of planets. 2. Days of rising and setting. 3. Planetary elongation for rising and setting. 4. Visibility corrections. 5. Computation of rising and setting. 6. Jupiter's rising and setting. 7. Venus: Rising and setting. 8. Rising and setting of a star. 9. Canopus: Rising.

##### 19. Conjunction of Planets ... 264

1. Types of planetary conjunctions. 2. Conjunction: Principle of computation. 3. Computation of conjunction.

##### 20. Conjunction of Stars and Planets ... 271

1. Conjunction of stars and planets. 2. Principle of planet-star conjunction. 3. Occultation of stars by planets. 4. Occultation of Rohiṇī by planets. 5. Occultation of stars by the Moon. 6. Time of star-planet conjunction.

#### V. INNOVATIVE TRENDS

##### 21. Novel Innovations ... 274

1. True longitude computation on the sphere of the zodiac. 2. Computation of True Moon. 3. Simplified astronomical procedures.

#### IV. OCCULTATION

##### 16. Eclipses ... 196

1. Cause stated in the Ṛgveda. 2. Cause of the lunar eclipse. 3. Lunar eclipse: Principle of computation. 4. Lunar eclipse computation: Vāsiṣṭha and Pauliṣa. 5. —Saurasiddhānta. 6. —Āryabhaṭīya. 7. —Āryabhaṭa's Midnight system. 8. —Emendation by Brahmagupta. 9. —Bhāskara I. 10. —Lalla. 11. —Bhāskara II. 12. —Karaṇaratna. 13. —Śrīpati. 14. —Vākyakaraṇa. 15. —Grahalāghava. 16. Lunar eclipse diagram: Vāsiṣṭha Pauliṣa. 17. —Āryabhaṭa's Midnight system. 18. —Bhāskara I. 19. —Lalla. 20. —Sūryasiddhānta. 21. —Bhāskara II. 22. —Karaṇaratna. 23. Solar eclipse: Computation: Pauliṣa. 24. —Romakasiddhānta. 25. —Saurasiddhānta. 26. —Āryabhaṭa's Midnight system. 27. —Bhāskara I. 28. —Lalla. 29. —Mahāsiddhānta. 30. —Bhāskara II. 31. —Karaṇaratna. 32. —Śrīpati. 33. —Grahalāghava. 34. —Solar eclipse diagram: Romakasiddhānta. 35. —Saurasiddhānta. 36. Colour of eclipses. 37. Conditions for non-prediction of eclipses. 38. —Inscriptional references: Lunar eclipses. 38. Solar eclipses.

##### 17. Phases of the Moon ... 241

1. Periodical appearance of the Moon. 2. Moon's luminosity. 3. Conditions of Moon's visibility. 4. Preliminaries for computation. 5. Visibility corrections: Ākṣa, Āyana and the Third. 6. Rising and setting of the Moon. 7. Moon's shadow. 8. Computation of Moon's cusps. 9. Moon's cusps—diagram.

##### 18. Heliacal rising and setting of Planets and Stars ... 254

1. Heliacal rising and setting of planets. 2. Days of rising and setting. 3. Planetary elongation for rising and setting. 4. Visibility corrections. 5. Computation of rising and setting. 6. Jupiter's rising and setting. 7. Venus: Rising and setting. 8. Rising and setting of a star. 9. Canopus: Rising.

##### 19. Conjunction of Planets ... 264

1. Types of planetary conjunctions. 2. Conjunction: Principle of computation. 3. Computation of conjunction.

##### 20. Conjunction of Stars and Planets ... 271

1. Conjunction of stars and planets. 2. Principle of planet-star conjunction. 3. Occultation of stars by planets. 4. Occultation of Rohiṇī by planets. 5. Occultation of stars by the Moon. 6. Time of star-planet conjunction.

#### V. INNOVATIVE TRENDS

##### 21. Novel Innovations ... 274

1. True longitude computation on the sphere of the zodiac. 2. Computation of True Moon. 3. Simplified astronomical procedures.

#### IV. OCCULTATION

##### 16. Eclipses ... 196

1. Cause stated in the Ṛgveda. 2. Cause of the lunar eclipse. 3. Lunar eclipse: Principle of computation. 4. Lunar eclipse computation: Vāsiṣṭha and Pauliṣa. 5. —Saurasiddhānta. 6. —Āryabhaṭīya. 7. —Āryabhaṭa's Midnight system. 8. —Emendation by Brahmagupta. 9. —Bhāskara I. 10. —Lalla. 11. —Bhāskara II. 12. —Karaṇaratna. 13. —Śrīpati. 14. —Vākyakaraṇa. 15. —Grahalāghava. 16. Lunar eclipse diagram: Vāsiṣṭha Pauliṣa. 17. —Āryabhaṭa's Midnight system. 18. —Bhāskara I. 19. —Lalla. 20. —Sūryasiddhānta. 21. —Bhāskara II. 22. —Karaṇaratna. 23. Solar eclipse: Computation: Pauliṣa. 24. —Romakasiddhānta. 25. —Saurasiddhānta. 26. —Āryabhaṭa's Midnight system. 27. —Bhāskara I. 28. —Lalla. 29. —Mahāsiddhānta. 30. —Bhāskara II. 31. —Karaṇaratna. 32. —Śrīpati. 33. —Grahalāghava. 34. —Solar eclipse diagram: Romakasiddhānta. 35. —Saurasiddhānta. 36. Colour of eclipses. 37. Conditions for non-prediction of eclipses. 38. —Inscriptional references: Lunar eclipses. 38. Solar eclipses.

##### 17. Phases of the Moon ... 241

1. Periodical appearance of the Moon. 2. Moon's luminosity. 3. Conditions of Moon's visibility. 4. Preliminaries for computation. 5. Visibility corrections: Ākṣa, Āyana and the Third. 6. Rising and setting of the Moon. 7. Moon's shadow. 8. Computation of Moon's cusps. 9. Moon's cusps—diagram.

##### 18. Heliacal rising and setting of Planets and Stars ... 254

1. Heliacal rising and setting of planets. 2. Days of rising and setting. 3. Planetary elongation for rising and setting. 4. Visibility corrections. 5. Computation of rising and setting. 6. Jupiter's rising and setting. 7. Venus: Rising and setting. 8. Rising and setting of a star. 9. Canopus: Rising.

##### 19. Conjunction of Planets ... 264

1. Types of planetary conjunctions. 2. Conjunction: Principle of computation. 3. Computation of conjunction.

##### 20. Conjunction of Stars and Planets ... 271

1. Conjunction of stars and planets. 2. Principle of planet-star conjunction. 3. Occultation of stars by planets. 4. Occultation of Rohiṇī by planets. 5. Occultation of stars by the Moon. 6. Time of star-planet conjunction.

#### V. INNOVATIVE TRENDS

##### 21. Novel Innovations ... 274

1. True longitude computation on the sphere of the zodiac. 2. Computation of True Moon. 3. Simplified astronomical procedures.

#### IV. OCCULTATION

##### 16. Eclipses ... 196

1. Cause stated in the Ṛgveda. 2. Cause of the lunar eclipse. 3. Lunar eclipse: Principle of computation. 4. Lunar eclipse computation: Vāsiṣṭha and Pauliṣa. 5. —Saurasiddhānta. 6. —Āryabhaṭīya. 7. —Āryabhaṭa's Midnight system. 8. —Emendation by Brahmagupta. 9. —Bhāskara I. 10. —Lalla. 11. —Bhāskara II. 12. —Karaṇaratna. 13. —Śrīpati. 14. —Vākyakaraṇa. 15. —Grahalāghava. 16. Lunar eclipse diagram: Vāsiṣṭha Pauliṣa. 17. —Āryabhaṭa's Midnight system. 18. —Bhāskara I. 19. —Lalla. 20. —Sūryasiddhānta. 21. —Bhāskara II. 22. —Karaṇaratna. 23. Solar eclipse: Computation: Pauliṣa. 24. —Romakasiddhānta. 25. —Saurasiddhānta. 26. —Āryabhaṭa's Midnight system. 27. —Bhāskara I. 28. —Lalla. 29. —Mahāsiddhānta. 30. —Bhāskara II. 31. —Karaṇaratna. 32. —Śrīpati. 33. —Grahalāghava. 34. —Solar eclipse diagram: Romakasiddhānta. 35. —Saurasiddhānta. 36. Colour of eclipses. 37. Conditions for non-prediction of eclipses. 38. —Inscriptional references: Lunar eclipses. 38. Solar eclipses.

##### 17. Phases of the Moon ... 241

1. Periodical appearance of the Moon. 2. Moon's luminosity. 3. Conditions of Moon's visibility. 4. Preliminaries for computation. 5. Visibility corrections: Ākṣa, Āyana and the Third. 6. Rising and setting of the Moon. 7. Moon's shadow. 8. Computation of Moon's cusps. 9. Moon's cusps—diagram.

##### 18. Heliacal rising and setting of Planets and Stars ... 254

1. Heliacal rising and setting of planets. 2. Days of rising and setting. 3. Planetary elongation for rising and setting. 4. Visibility corrections. 5. Computation of rising and setting. 6. Jupiter's rising and setting. 7. Venus: Rising and setting. 8. Rising and setting of a star. 9. Canopus: Rising.

##### 19. Conjunction of Planets ... 264

1. Types of planetary conjunctions. 2. Conjunction: Principle of computation. 3. Computation of conjunction.

##### 20. Conjunction of Stars and Planets ... 271

1. Conjunction of stars and planets. 2. Principle of planet-star conjunction. 3. Occultation of stars by planets. 4. Occultation of Rohiṇī by planets. 5. Occultation of stars by the Moon. 6. Time of star-planet conjunction.

#### V. INNOVATIVE TRENDS

##### 21. Novel Innovations ... 274

1. True longitude computation on the sphere of the zodiac. 2. Computation of True Moon. 3. Simplified astronomical procedures.

#### IV. OCCULTATION

##### 16. Eclipses ... 196

1. Cause stated in the Ṛgveda. 2. Cause of the lunar eclipse. 3. Lunar eclipse: Principle of computation. 4. Lunar eclipse computation: Vāsiṣṭha and Pauliṣa. 5. —Saurasiddhānta. 6. —Āryabhaṭīya. 7. —Āryabhaṭa's Midnight system. 8. —Emendation by Brahmagupta. 9. —Bhāskara I. 10. —Lalla. 11. —Bhāskara II. 12. —Karaṇaratna. 13. —Śrīpati. 14. —Vākyakaraṇa. 15. —Grahalāghava. 16. Lunar eclipse diagram: Vāsiṣṭha Pauliṣa. 17. —Āryabhaṭa's Midnight system. 18. —Bhāskara I. 19. —Lalla. 20. —Sūryasiddhānta. 21. —Bhāskara II. 22. —Karaṇaratna. 23. Solar eclipse: Computation: Pauliṣa. 24. —Romakasiddhānta. 25. —Saurasiddhānta. 26. —Āryabhaṭa's Midnight system. 27. —Bhāskara I. 28. —Lalla. 29. —Mahāsiddhānta. 30. —Bhāskara II. 31. —Karaṇaratna. 32. —Śrīpati. 33. —Grahalāghava. 34. —Solar eclipse diagram: Romakasiddhānta. 35. —Saurasiddhānta. 36. Colour of eclipses. 37. Conditions for non-prediction of eclipses. 38. —Inscriptional references: Lunar eclipses. 38. Solar eclipses.

##### 17. Phases of the Moon ... 241

1. Periodical appearance of the Moon. 2. Moon's luminosity. 3. Conditions of Moon's visibility. 4. Preliminaries for computation. 5. Visibility corrections: Ākṣa, Āyana and the Third. 6. Rising and setting of the Moon. 7. Moon's shadow. 8. Computation of Moon's cusps. 9. Moon's cusps—diagram.

##### 18. Heliacal rising and setting of Planets and Stars ... 254

1. Heliacal rising and setting of planets. 2. Days of rising and setting. 3. Planetary elongation for rising and setting. 4. Visibility corrections. 5. Computation of rising and setting. 6. Jupiter's rising and setting. 7. Venus: Rising and setting. 8. Rising and setting of a star. 9. Canopus: Rising.

##### 19. Conjunction of Planets ... 264

1. Types of planetary conjunctions. 2. Conjunction: Principle of computation. 3. Computation of conjunction.

##### 20. Conjunction of Stars and Planets ... 271

1. Conjunction of stars and planets. 2. Principle of planet-star conjunction. 3. Occultation of stars by planets. 4. Occultation of Rohiṇī by planets. 5. Occultation of stars by the Moon. 6. Time of star-planet conjunction.

#### V. INNOVATIVE TRENDS

##### 21. Novel Innovations ... 274

1. True longitude computation on the sphere of the zodiac. 2. Computation of True Moon. 3. Simplified astronomical procedures.

#### IV. OCCULTATION

##### 16. Eclipses ... 196

1. Cause stated in the Ṛgveda. 2. Cause of the lunar eclipse. 3. Lunar eclipse: Principle of computation. 4. Lunar eclipse computation: Vāsiṣṭha and Pauliṣa. 5. —Saurasiddhānta. 6. —Āryabhaṭīya. 7. —Āryabhaṭa's Midnight system. 8. —Emendation by Brahmagupta. 9. —Bhāskara I. 10. —Lalla. 11. —Bhāskara II. 12. —Karaṇaratna. 13. —Śrīpati. 14. —Vākyakaraṇa. 15. —Grahalāghava. 16. Lunar eclipse diagram: Vāsiṣṭha Pauliṣa. 17. —Āryabhaṭa's Midnight system. 18. —Bhāskara I. 19. —Lalla. 20. —Sūryasiddhānta. 21. —Bhāskara II. 22. —Karaṇaratna. 23. Solar eclipse: Computation: Pauliṣa. 24. —Romakasiddhānta. 25. —Saurasiddhānta. 26. —Āryabhaṭa's Midnight system. 27. —Bhāskara I. 28. —Lalla. 29. —Mahāsiddhānta. 30. —Bhāskara II. 31. —Karaṇaratna. 32. —Śrīpati. 33. —Grahalāghava. 34. —Solar eclipse diagram: Romakasiddhānta. 35. —Saurasiddhānta. 36. Colour of eclipses. 37. Conditions for non-prediction of eclipses. 38. —Inscriptional references: Lunar eclipses. 38. Solar eclipses.

##### 17. Phases of the Moon ... 241

1. Periodical appearance of the Moon. 2. Moon's luminosity. 3. Conditions of Moon's visibility. 4. Preliminaries for computation. 5. Visibility corrections: Ākṣa, Āyana and the Third. 6. Rising and setting of the Moon. 7. Moon's shadow. 8. Computation of Moon's cusps. 9. Moon's cusps—diagram.

##### 18. Heliacal rising and setting of Planets and Stars ... 254

1. Heliacal rising and setting of planets. 2. Days of rising and setting. 3. Planetary elongation for rising and setting. 4. Visibility corrections. 5. Computation of rising and setting. 6. Jupiter's rising and setting. 7. Venus: Rising and setting. 8. Rising and setting of a star. 9. Canopus: Rising.

##### 19. Conjunction of Planets ... 264

1. Types of planetary conjunctions. 2. Conjunction: Principle of computation. 3. Computation of conjunction.

##### 20. Conjunction of Stars and Planets ... 271

1. Conjunction of stars and planets. 2. Principle of planet-star conjunction. 3. Occultation of stars by planets. 4. Occultation of Rohiṇī by planets. 5. Occultation of stars by the Moon. 6. Time of star-planet conjunction.

#### V. INNOVATIVE TRENDS

##### 21. Novel Innovations ... 274

1. True longitude computation on the sphere of the zodiac. 2. Computation of True Moon. 3. Simplified astronomical procedures.



#### IV. OCCULTATION

##### 16. Eclipses ... 196

1. Cause stated in the Ṛgveda. 2. Cause of the lunar eclipse. 3. Lunar eclipse: Principle of computation. 4. Lunar eclipse computation: Vāsiṣṭha and Pauliṣa. 5. —Saurasiddhānta. 6. —Āryabhaṭīya. 7. —Āryabhaṭa's Midnight system. 8. —Emendation by Brahmagupta. 9. —Bhāskara I. 10. —Lalla. 11. —Bhāskara II. 12. —Karaṇaratna. 13. —Śrīpati. 14. —Vākyakaraṇa. 15. —Grahalāghava. 16. Lunar eclipse diagram: Vāsiṣṭha Pauliṣa. 17. —Āryabhaṭa's Midnight system. 18. —Bhāskara I. 19. —Lalla. 20. —Sūryasiddhānta. 21. —Bhāskara II. 22. —Karaṇaratna. 23. Solar eclipse: Computation: Pauliṣa. 24. —Romakasiddhānta. 25. —Saurasiddhānta. 26. —Āryabhaṭa's Midnight system. 27. —Bhāskara I. 28. —Lalla. 29. —Mahāsiddhānta. 30. —Bhāskara II. 31. —Karaṇaratna. 32. —Śrīpati. 33. —Grahalāghava. 34. —Solar eclipse diagram: Romakasiddhānta. 35. —Saurasiddhānta. 36. Colour of eclipses. 37. Conditions for non-prediction of eclipses. 38. —Inscriptional references: Lunar eclipses. 38. Solar eclipses.

##### 17. Phases of the Moon ... 241

1. Periodical appearance of the Moon. 2. Moon's luminosity. 3. Conditions of Moon's visibility. 4. Preliminaries for computation. 5. Visibility corrections: Ākṣa, Āyana and the Third. 6. Rising and setting of the Moon. 7. Moon's shadow. 8. Computation of Moon's cusps. 9. Moon's cusps—diagram.

##### 18. Heliacal rising and setting of Planets and Stars ... 254

1. Heliacal rising and setting of planets. 2. Days of rising and setting. 3. Planetary elongation for rising and setting. 4. Visibility corrections. 5. Computation of rising and setting. 6. Jupiter's rising and setting. 7. Venus: Rising and setting. 8. Rising and setting of a star. 9. Canopus: Rising.

##### 19. Conjunction of Planets ... 264

1. Types of planetary conjunctions. 2. Conjunction: Principle of computation. 3. Computation of conjunction.

##### 20. Conjunction of Stars and Planets ... 271

1. Conjunction of stars and planets. 2. Principle of planet-star conjunction. 3. Occultation of stars by planets. 4. Occultation of Rohiṇī by planets. 5. Occultation of stars by the Moon. 6. Time of star-planet conjunction.

#### V. INNOVATIVE TRENDS

##### 21. Novel Innovations ... 274

1. True longitude computation on the sphere of the zodiac. 2. Computation of True Moon. 3. Simplified astronomical procedures.

#### IV. OCCULTATION

##### 16. Eclipses ... 196

1. Cause stated in the Ṛgveda. 2. Cause of the lunar eclipse. 3. Lunar eclipse: Principle of computation. 4. Lunar eclipse computation: Vāsiṣṭha and Pauliṣa. 5. —Saurasiddhānta. 6. —Āryabhaṭīya. 7. —Āryabhaṭa's Midnight system. 8. —Emendation by Brahmagupta. 9. —Bhāskara I. 10. —Lalla. 11. —Bhāskara II. 12. —Karaṇaratna. 13. —Śrīpati. 14. —Vākyakaraṇa. 15. —Grahalāghava. 16. Lunar eclipse diagram: Vāsiṣṭha Pauliṣa. 17. —Āryabhaṭa's Midnight system. 18. —Bhāskara I. 19. —Lalla. 20. —Sūryasiddhānta. 21. —Bhāskara II. 22. —Karaṇaratna. 23. Solar eclipse: Computation: Pauliṣa. 24. —Romakasiddhānta. 25. —Saurasiddhānta. 26. —Āryabhaṭa's Midnight system. 27. —Bhāskara I. 28. —Lalla. 29. —Mahāsiddhānta. 30. —Bhāskara II. 31. —Karaṇaratna. 32. —Śrīpati. 33. —Grahalāghava. 34. —Solar eclipse diagram: Romakasiddhānta. 35. —Saurasiddhānta. 36. Colour of eclipses. 37. Conditions for non-prediction of eclipses. 38. —Inscriptional references: Lunar eclipses. 38. Solar eclipses.

##### 17. Phases of the Moon ... 241

1. Periodical appearance of the Moon. 2. Moon's luminosity. 3. Conditions of Moon's visibility. 4. Preliminaries for computation. 5. Visibility corrections: Ākṣa, Āyana and the Third. 6. Rising and setting of the Moon. 7. Moon's shadow. 8. Computation of Moon's cusps. 9. Moon's cusps—diagram.

##### 18. Heliacal rising and setting of Planets and Stars ... 254

1. Heliacal rising and setting of planets. 2. Days of rising and setting. 3. Planetary elongation for rising and setting. 4. Visibility corrections. 5. Computation of rising and setting. 6. Jupiter's rising and setting. 7. Venus: Rising and setting. 8. Rising and setting of a star. 9. Canopus: Rising.

##### 19. Conjunction of Planets ... 264

1. Types of planetary conjunctions. 2. Conjunction: Principle of computation. 3. Computation of conjunction.

##### 20. Conjunction of Stars and Planets ... 271

1. Conjunction of stars and planets. 2. Principle of planet-star conjunction. 3. Occultation of stars by planets. 4. Occultation of Rohiṇī by planets. 5. Occultation of stars by the Moon. 6. Time of star-planet conjunction.

#### V. INNOVATIVE TRENDS

##### 21. Novel Innovations ... 274

1. True longitude computation on the sphere of the zodiac. 2. Computation of True Moon. 3. Simplified astronomical procedures.

#### IV. OCCULTATION

##### 16. Eclipses ... 196

1. Cause stated in the Ṛgveda. 2. Cause of the lunar eclipse. 3. Lunar eclipse: Principle of computation. 4. Lunar eclipse computation: Vāsiṣṭha and Pauliṣa. 5. —Saurasiddhānta. 6. —Āryabhaṭīya. 7. —Āryabhaṭa's Midnight system. 8. —Emendation by Brahmagupta. 9. —Bhāskara I. 10. —Lalla. 11. —Bhāskara II. 12. —Karaṇaratna. 13. —Śrīpati. 14. —Vākyakaraṇa. 15. —Grahalāghava. 16. Lunar eclipse diagram: Vāsiṣṭha Pauliṣa. 17. —Āryabhaṭa's Midnight system. 18. —Bhāskara I. 19. —Lalla. 20. —Sūryasiddhānta. 21. —Bhāskara II. 22. —Karaṇaratna. 23. Solar eclipse: Computation: Pauliṣa. 24. —Romakasiddhānta. 25. —Saurasiddhānta. 26. —Āryabhaṭa's Midnight system. 27. —Bhāskara I. 28. —Lalla. 29. —Mahāsiddhānta. 30. —Bhāskara II. 31. —Karaṇaratna. 32. —Śrīpati. 33. —Grahalāghava. 34. —Solar eclipse diagram: Romakasiddhānta. 35. —Saurasiddhānta. 36. Colour of eclipses. 37. Conditions for non-prediction of eclipses. 38. —Inscriptional references: Lunar eclipses. 38. Solar eclipses.

##### 17. Phases of the Moon ... 241

1. Periodical appearance of the Moon. 2. Moon's luminosity. 3. Conditions of Moon's visibility. 4. Preliminaries for computation. 5. Visibility corrections: Ākṣa, Āyana and the Third. 6. Rising and setting of the Moon. 7. Moon's shadow. 8. Computation of Moon's cusps. 9. Moon's cusps—diagram.

##### 18. Heliacal rising and setting of Planets and Stars ... 254

1. Heliacal rising and setting of planets. 2. Days of rising and setting. 3. Planetary elongation for rising and setting. 4. Visibility corrections. 5. Computation of rising and setting. 6. Jupiter's rising and setting. 7. Venus: Rising and setting. 8. Rising and setting of a star. 9. Canopus: Rising.

##### 19. Conjunction of Planets ... 264

1. Types of planetary conjunctions. 2. Conjunction: Principle of computation. 3. Computation of conjunction.

##### 20. Conjunction of Stars and Planets ... 271

1. Conjunction of stars and planets. 2. Principle of planet-star conjunction. 3. Occultation of stars by planets. 4. Occultation of Rohiṇī by planets. 5. Occultation of stars by the Moon. 6. Time of star-planet conjunction.

#### V. INNOVATIVE TRENDS

##### 21. Novel Innovations ... 274

1. True longitude computation on the sphere of the zodiac. 2. Computation of True Moon. 3. Simplified astronomical procedures.

#### IV. OCCULTATION

##### 16. Eclipses ... 196

1. Cause stated in the Ṛgveda. 2. Cause of the lunar eclipse. 3. Lunar eclipse: Principle of computation. 4. Lunar eclipse computation: Vāsiṣṭha and Pauliṣa. 5. —Saurasiddhānta. 6. —Āryabhaṭīya. 7. —Āryabhaṭa's Midnight system. 8. —Emendation by Brahmagupta. 9. —Bhāskara I. 10. —Lalla. 11. —Bhāskara II. 12. —Karaṇaratna. 13. —Śrīpati. 14. —Vākyakaraṇa. 15. —Grahalāghava. 16. Lunar eclipse diagram: Vāsiṣṭha Pauliṣa. 17. —Āryabhaṭa's Midnight system. 18. —Bhāskara I. 19. —Lalla. 20. —Sūryasiddhānta. 21. —Bhāskara II. 22. —Karaṇaratna. 23. Solar eclipse: Computation: Pauliṣa. 24. —Romakasiddhānta. 25. —Saurasiddhānta. 26. —Āryabhaṭa's Midnight system. 27. —Bhāskara I. 28. —Lalla. 29. —Mahāsiddhānta. 30. —Bhāskara II. 31. —Karaṇaratna. 32. —Śrīpati. 33. —Grahalāghava. 34. —Solar eclipse diagram: Romakasiddhānta. 35. —Saurasiddhānta. 36. Colour of eclipses. 37. Conditions for non-prediction of eclipses. 38. —Inscriptional references: Lunar eclipses. 38. Solar eclipses.

##### 17. Phases of the Moon ... 241

1. Periodical appearance of the Moon. 2. Moon's luminosity. 3. Conditions of Moon's visibility. 4. Preliminaries for computation. 5. Visibility corrections: Ākṣa, Āyana and the Third. 6. Rising and setting of the Moon. 7. Moon's shadow. 8. Computation of Moon's cusps. 9. Moon's cusps—diagram.

##### 18. Heliacal rising and setting of Planets and Stars ... 254

1. Heliacal rising and setting of planets. 2. Days of rising and setting. 3. Planetary elongation for rising and setting. 4. Visibility corrections. 5. Computation of rising and setting. 6. Jupiter's rising and setting. 7. Venus: Rising and setting. 8. Rising and setting of a star. 9. Canopus: Rising.

##### 19. Conjunction of Planets ... 264

1. Types of planetary conjunctions. 2. Conjunction: Principle of computation. 3. Computation of conjunction.

##### 20. Conjunction of Stars and Planets ... 271

1. Conjunction of stars and planets. 2. Principle of planet-star conjunction. 3. Occultation of stars by planets. 4. Occultation of Rohiṇī by planets. 5. Occultation of stars by the Moon. 6. Time of star-planet conjunction.

#### V. INNOVATIVE TRENDS

##### 21. Novel Innovations ... 274

1. True longitude computation on the sphere of the zodiac. 2. Computation of True Moon. 3. Simplified astronomical procedures.

#### IV. OCCULTATION

##### 16. Eclipses ... 196

1. Cause stated in the Ṛgveda. 2. Cause of the lunar eclipse. 3. Lunar eclipse: Principle of computation. 4. Lunar eclipse computation: Vāsiṣṭha and Pauliṣa. 5. —Saurasiddhānta. 6. —Āryabhaṭīya. 7. —Āryabhaṭa's Midnight system. 8. —Emendation by Brahmagupta. 9. —Bhāskara I. 10. —Lalla. 11. —Bhāskara II. 12. —Karaṇaratna. 13. —Śrīpati. 14. —Vākyakaraṇa. 15. —Grahalāghava. 16. Lunar eclipse diagram: Vāsiṣṭha Pauliṣa. 17. —Āryabhaṭa's Midnight system. 18. —Bhāskara I. 19. —Lalla. 20. —Sūryasiddhānta. 21. —Bhāskara II. 22. —Karaṇaratna. 23. Solar eclipse: Computation: Pauliṣa. 24. —Romakasiddhānta. 25. —Saurasiddhānta. 26. —Āryabhaṭa's Midnight system. 27. —Bhāskara I. 28. —Lalla. 29. —Mahāsiddhānta. 30. —Bhāskara II. 31. —Karaṇaratna. 32. —Śrīpati. 33. —Grahalāghava. 34. —Solar eclipse diagram: Romakasiddhānta. 35. —Saurasiddhānta. 36. Colour of eclipses. 37. Conditions for non-prediction of eclipses. 38. —Inscriptional references: Lunar eclipses. 38. Solar eclipses.

##### 17. Phases of the Moon ... 241

1. Periodical appearance of the Moon. 2. Moon's luminosity. 3. Conditions of Moon's visibility. 4. Preliminaries for computation. 5. Visibility corrections: Ākṣa, Āyana and the Third. 6. Rising and setting of the Moon. 7. Moon's shadow. 8. Computation of Moon's cusps. 9. Moon's cusps—diagram.

##### 18. Heliacal rising and setting of Planets and Stars ... 254

1. Heliacal rising and setting of planets. 2. Days of rising and setting. 3. Planetary elongation for rising and setting. 4. Visibility corrections. 5. Computation of rising and setting. 6. Jupiter's rising and setting. 7. Venus: Rising and setting. 8. Rising and setting of a star. 9. Canopus: Rising.

##### 19. Conjunction of Planets ... 264

1. Types of planetary conjunctions. 2. Conjunction: Principle of computation. 3. Computation of conjunction.

##### 20. Conjunction of Stars and Planets ... 271

1. Conjunction of stars and planets. 2. Principle of planet-star conjunction. 3. Occultation of stars by planets. 4. Occultation of Rohiṇī by planets. 5. Occultation of stars by the Moon. 6. Time of star-planet conjunction.

#### V. INNOVATIVE TRENDS

##### 21. Novel Innovations ... 274

1. True longitude computation on the sphere of the zodiac. 2. Computation of True Moon. 3. Simplified astronomical procedures.

#### IV. OCCULTATION

##### 16. Eclipses ... 196

1. Cause stated in the Ṛgveda. 2. Cause of the lunar eclipse. 3. Lunar eclipse: Principle of computation. 4. Lunar eclipse computation: Vāsiṣṭha and Pauliṣa. 5. —Saurasiddhānta. 6. —Āryabhaṭīya. 7. —Āryabhaṭa's Midnight system. 8. —Emendation by Brahmagupta. 9. —Bhāskara I. 10. —Lalla. 11. —Bhāskara II. 12. —Karaṇaratna. 13. —Śrīpati. 14. —Vākyakaraṇa. 15. —Grahalāghava. 16. Lunar eclipse diagram: Vāsiṣṭha Pauliṣa. 17. —Āryabhaṭa's Midnight system. 18. —Bhāskara I. 19. —Lalla. 20. —Sūryasiddhānta. 21. —Bhāskara II. 22. —Karaṇaratna. 23. Solar eclipse: Computation: Pauliṣa. 24. —Romakasiddhānta. 25. —Saurasiddhānta. 26. —Āryabhaṭa's Midnight system. 27. —Bhāskara I. 28. —Lalla. 29. —Mahāsiddhānta. 30. —Bhāskara II. 31. —Karaṇaratna. 32. —Śrīpati. 33. —Grahalāghava. 34. —Solar eclipse diagram: Romakasiddhānta. 35. —Saurasiddhānta. 36. Colour of eclipses. 37. Conditions for non-prediction of eclipses. 38. —Inscriptional references: Lunar eclipses. 38. Solar eclipses.

##### 17. Phases of the Moon ... 241

1. Periodical appearance of the Moon. 2. Moon's luminosity. 3. Conditions of Moon's visibility. 4. Preliminaries for computation. 5. Visibility corrections: Ākṣa, Āyana and the Third. 6. Rising and setting of the Moon. 7. Moon's shadow. 8. Computation of Moon's cusps. 9. Moon's cusps—diagram.

##### 18. Heliacal rising and setting of Planets and Stars ... 254

1. Heliacal rising and setting of planets. 2. Days of rising and setting. 3. Planetary elongation for rising and setting. 4. Visibility corrections. 5. Computation of rising and setting. 6. Jupiter's rising and setting. 7. Venus: Rising and setting. 8. Rising and setting of a star. 9. Canopus: Rising.

##### 19. Conjunction of Planets ... 264

1. Types of planetary conjunctions. 2. Conjunction: Principle of computation. 3. Computation of conjunction.

##### 20. Conjunction of Stars and Planets ... 271

1. Conjunction of stars and planets. 2. Principle of planet-star conjunction. 3. Occultation of stars by planets. 4. Occultation of Rohiṇī by planets. 5. Occultation of stars by the Moon. 6. Time of star-planet conjunction.

#### V. INNOVATIVE TRENDS

##### 21. Novel Innovations ... 274

1. True longitude computation on the sphere of the zodiac. 2. Computation of True Moon. 3. Simplified astronomical procedures.

#### IV. OCCULTATION

##### 16. Eclipses ... 196

1. Cause stated in the Ṛgveda. 2. Cause of the lunar eclipse. 3. Lunar eclipse: Principle of computation. 4. Lunar eclipse computation: Vāsiṣṭha and Pauliṣa. 5. —Saurasiddhānta. 6. —Āryabhaṭīya. 7. —Āryabhaṭa's Midnight system. 8. —Emendation by Brahmagupta. 9. —Bhāskara I. 10. —Lalla. 11. —Bhāskara II. 12. —Karaṇaratna. 13. —Śrīpati. 14. —Vākyakaraṇa. 15. —Grahalāghava. 16. Lunar eclipse diagram: Vāsiṣṭha Pauliṣa. 17. —Āryabhaṭa's Midnight system. 18. —Bhāskara I. 19. —Lalla. 20. —Sūryasiddhānta. 21. —Bhāskara II. 22. —Karaṇaratna. 23. Solar eclipse: Computation: Pauliṣa. 24. —Romakasiddhānta. 25. —Saurasiddhānta. 26. —Āryabhaṭa's Midnight system. 27. —Bhāskara I. 28. —Lalla. 29. —Mahāsiddhānta. 30. —Bhāskara II. 31. —Karaṇaratna. 32. —Śrīpati. 33. —Grahalāghava. 34. —Solar eclipse diagram: Romakasiddhānta. 35. —Saurasiddhānta. 36. Colour of eclipses. 37. Conditions for non-prediction of eclipses. 38. —Inscriptional references: Lunar eclipses. 38. Solar eclipses.

##### 17. Phases of the Moon ... 241

1. Periodical appearance of the Moon. 2. Moon's luminosity. 3. Conditions of Moon's visibility. 4. Preliminaries for computation. 5. Visibility corrections: Ākṣa, Āyana and the Third. 6. Rising and setting of the Moon. 7. Moon's shadow. 8. Computation of Moon's cusps. 9. Moon's cusps—diagram.

##### 18. Heliacal rising and setting of Planets and Stars ... 254

1. Heliacal rising and setting of planets. 2. Days of rising and setting. 3. Planetary elongation for rising and setting. 4. Visibility corrections. 5. Computation of rising and setting. 6. Jupiter's rising and setting. 7. Venus: Rising and setting. 8. Rising and setting of a star. 9. Canopus: Rising.

##### 19. Conjunction of Planets ... 264

1. Types of planetary conjunctions. 2. Conjunction: Principle of computation. 3. Computation of conjunction.

##### 20. Conjunction of Stars and Planets ... 271

1. Conjunction of stars and planets. 2. Principle of planet-star conjunction. 3. Occultation of stars by planets. 4. Occultation of Rohiṇī by planets. 5. Occultation of stars by the Moon. 6. Time of star-planet conjunction.

#### V. INNOVATIVE TRENDS

##### 21. Novel Innovations ... 274

1. True longitude computation on the sphere of the zodiac. 2. Computation of True Moon. 3. Simplified astronomical procedures.

#### IV. OCCULTATION

##### 16. Eclipses ... 196

1. Cause stated in the Ṛgveda. 2. Cause of the lunar eclipse. 3. Lunar eclipse: Principle of computation. 4. Lunar eclipse computation: Vāsiṣṭha and Pauliṣa. 5. —Saurasiddhānta. 6. —Āryabhaṭīya. 7. —Āryabhaṭa's Midnight system. 8. —Emendation by Brahmagupta. 9. —Bhāskara I. 10. —Lalla. 11. —Bhāskara II. 12. —Karaṇaratna. 13. —Śrīpati. 14. —Vākyakaraṇa. 15. —Grahalāghava. 16. Lunar eclipse diagram: Vāsiṣṭha Pauliṣa. 17. —Āryabhaṭa's Midnight system. 18. —Bhāskara I. 19. —Lalla. 20. —Sūryasiddhānta. 21. —Bhāskara II. 22. —Karaṇaratna. 23. Solar eclipse: Computation: Pauliṣa. 24. —Romakasiddhānta. 25. —Saurasiddhānta. 26. —Āryabhaṭa's Midnight system. 27. —Bhāskara I. 28. —Lalla. 29. —Mahāsiddhānta. 30. —Bhāskara II. 31. —Karaṇaratna. 32. —Śrīpati. 33. —Grahalāghava. 34. —Solar eclipse diagram: Romakasiddhānta. 35. —Saurasiddhānta. 36. Colour of eclipses. 37. Conditions for non-prediction of eclipses. 38. —Inscriptional references: Lunar eclipses. 38. Solar eclipses.

##### 17. Phases of the Moon ... 241

1. Periodical appearance of the Moon. 2. Moon's luminosity. 3. Conditions of Moon's visibility. 4. Preliminaries for computation. 5. Visibility corrections: Ākṣa, Āyana and the Third. 6. Rising and setting of the Moon. 7. Moon's shadow. 8. Computation of Moon's cusps. 9. Moon's cusps—diagram.

##### 18. Heliacal rising and setting of Planets and Stars ... 254

1. Heliacal rising and setting of planets. 2. Days of rising and setting. 3. Planetary elongation for rising and setting. 4. Visibility corrections. 5. Computation of rising and setting. 6. Jupiter's rising and setting. 7. Venus: Rising and setting. 8. Rising and setting of a star. 9. Canopus: Rising.

##### 19. Conjunction of Planets ... 264

1. Types of planetary conjunctions. 2. Conjunction: Principle of computation. 3. Computation of conjunction.

##### 20. Conjunction of Stars and Planets ... 271

1. Conjunction of stars and planets. 2. Principle of planet-star conjunction. 3. Occultation of stars by planets. 4. Occultation of Rohiṇī by planets. 5. Occultation of stars by the Moon. 6. Time of star-planet conjunction.

#### V. INNOVATIVE TRENDS

##### 21. Novel Innovations ... 274

1. True longitude computation on the sphere of the zodiac. 2. Computation of True Moon. 3. Simplified astronomical procedures.



#### IV. OCCULTATION

##### 16. Eclipses ... 196

1. Cause stated in the Ṛgveda. 2. Cause of the lunar eclipse. 3. Lunar eclipse: Principle of computation. 4. Lunar eclipse computation: Vāsiṣṭha and Pauliṣa. 5. —Saurasiddhānta. 6. —Āryabhaṭīya. 7. —Āryabhaṭa's Midnight system. 8. —Emendation by Brahmagupta. 9. —Bhāskara I. 10. —Lalla. 11. —Bhāskara II. 12. —Karaṇaratna. 13. —Śrīpati. 14. —Vākyakaraṇa. 15. —Grahalāghava. 16. Lunar eclipse diagram: Vāsiṣṭha Pauliṣa. 17. —Āryabhaṭa's Midnight system. 18. —Bhāskara I. 19. —Lalla. 20. —Sūryasiddhānta. 21. —Bhāskara II. 22. —Karaṇaratna. 23. Solar eclipse: Computation: Pauliṣa. 24. —Romakasiddhānta. 25. —Saurasiddhānta. 26. —Āryabhaṭa's Midnight system. 27. —Bhāskara I. 28. —Lalla. 29. —Mahāsiddhānta. 30. —Bhāskara II. 31. —Karaṇaratna. 32. —Śrīpati. 33. —Grahalāghava. 34. —Solar eclipse diagram: Romakasiddhānta. 35. —Saurasiddhānta. 36. Colour of eclipses. 37. Conditions for non-prediction of eclipses. 38. —Inscriptional references: Lunar eclipses. 38. Solar eclipses.

##### 17. Phases of the Moon ... 241

1. Periodical appearance of the Moon. 2. Moon's luminosity. 3. Conditions of Moon's visibility. 4. Preliminaries for computation. 5. Visibility corrections: Ākṣa, Āyana and the Third. 6. Rising and setting of the Moon. 7. Moon's shadow. 8. Computation of Moon's cusps. 9. Moon's cusps—diagram.

##### 18. Heliacal rising and setting of Planets and Stars ... 254

1. Heliacal rising and setting of planets. 2. Days of rising and setting. 3. Planetary elongation for rising and setting. 4. Visibility corrections. 5. Computation of rising and setting. 6. Jupiter's rising and setting. 7. Venus: Rising and setting. 8. Rising and setting of a star. 9. Canopus: Rising.

##### 19. Conjunction of Planets ... 264

1. Types of planetary conjunctions. 2. Conjunction: Principle of computation. 3. Computation of conjunction.

##### 20. Conjunction of Stars and Planets ... 271

1. Conjunction of stars and planets. 2. Principle of planet-star conjunction. 3. Occultation of stars by planets. 4. Occultation of Rohiṇī by planets. 5. Occultation of stars by the Moon. 6. Time of star-planet conjunction.

#### V. INNOVATIVE TRENDS

##### 21. Novel Innovations ... 274

1. True longitude computation on the sphere of the zodiac. 2. Computation of True Moon. 3. Simplified astronomical procedures.

#### IV. OCCULTATION

##### 16. Eclipses ... 196

1. Cause stated in the Ṛgveda. 2. Cause of the lunar eclipse. 3. Lunar eclipse: Principle of computation. 4. Lunar eclipse computation: Vāsiṣṭha and Pauliṣa. 5. —Saurasiddhānta. 6. —Āryabhaṭīya. 7. —Āryabhaṭa's Midnight system. 8. —Emendation by Brahmagupta. 9. —Bhāskara I. 10. —Lalla. 11. —Bhāskara II. 12. —Karaṇaratna. 13. —Śrīpati. 14. —Vākyakaraṇa. 15. —Grahalāghava. 16. Lunar eclipse diagram: Vāsiṣṭha Pauliṣa. 17. —Āryabhaṭa's Midnight system. 18. —Bhāskara I. 19. —Lalla. 20. —Sūryasiddhānta. 21. —Bhāskara II. 22. —Karaṇaratna. 23. Solar eclipse: Computation: Pauliṣa. 24. —Romakasiddhānta. 25. —Saurasiddhānta. 26. —Āryabhaṭa's Midnight system. 27. —Bhāskara I. 28. —Lalla. 29. —Mahāsiddhānta. 30. —Bhāskara II. 31. —Karaṇaratna. 32. —Śrīpati. 33. —Grahalāghava. 34. —Solar eclipse diagram: Romakasiddhānta. 35. —Saurasiddhānta. 36. Colour of eclipses. 37. Conditions for non-prediction of eclipses. 38. —Inscriptional references: Lunar eclipses. 38. Solar eclipses.

##### 17. Phases of the Moon ... 241

1. Periodical appearance of the Moon. 2. Moon's luminosity. 3. Conditions of Moon's visibility. 4. Preliminaries for computation. 5. Visibility corrections: Ākṣa, Āyana and the Third. 6. Rising and setting of the Moon. 7. Moon's shadow. 8. Computation of Moon's cusps. 9. Moon's cusps—diagram.

##### 18. Heliacal rising and setting of Planets and Stars ... 254

1. Heliacal rising and setting of planets. 2. Days of rising and setting. 3. Planetary elongation for rising and setting. 4. Visibility corrections. 5. Computation of rising and setting. 6. Jupiter's rising and setting. 7. Venus: Rising and setting. 8. Rising and setting of a star. 9. Canopus: Rising.

##### 19. Conjunction of Planets ... 264

1. Types of planetary conjunctions. 2. Conjunction: Principle of computation. 3. Computation of conjunction.

##### 20. Conjunction of Stars and Planets ... 271

1. Conjunction of stars and planets. 2. Principle of planet-star conjunction. 3. Occultation of stars by planets. 4. Occultation of Rohiṇī by planets. 5. Occultation of stars by the Moon. 6. Time of star-planet conjunction.

#### V. INNOVATIVE TRENDS

##### 21. Novel Innovations ... 274

1. True longitude computation on the sphere of the zodiac. 2. Computation of True Moon. 3. Simplified astronomical procedures.

#### IV. OCCULTATION

##### 16. Eclipses ... 196

1. Cause stated in the Ṛgveda. 2. Cause of the lunar eclipse. 3. Lunar eclipse: Principle of computation. 4. Lunar eclipse computation: Vāsiṣṭha and Pauliṣa. 5. —Saurasiddhānta. 6. —Āryabhaṭīya. 7. —Āryabhaṭa's Midnight system. 8. —Emendation by Brahmagupta. 9. —Bhāskara I. 10. —Lalla. 11. —Bhāskara II. 12. —Karaṇaratna. 13. —Śrīpati. 14. —Vākyakaraṇa. 15. —Grahalāghava. 16. Lunar eclipse diagram: Vāsiṣṭha Pauliṣa. 17. —Āryabhaṭa's Midnight system. 18. —Bhāskara I. 19. —Lalla. 20. —Sūryasiddhānta. 21. —Bhāskara II. 22. —Karaṇaratna. 23. Solar eclipse: Computation: Pauliṣa. 24. —Romakasiddhānta. 25. —Saurasiddhānta. 26. —Āryabhaṭa's Midnight system. 27. —Bhāskara I. 28. —Lalla. 29. —Mahāsiddhānta. 30. —Bhāskara II. 31. —Karaṇaratna. 32. —Śrīpati. 33. —Grahalāghava. 34. —Solar eclipse diagram: Romakasiddhānta. 35. —Saurasiddhānta. 36. Colour of eclipses. 37. Conditions for non-prediction of eclipses. 38. —Inscriptional references: Lunar eclipses. 38. Solar eclipses.

##### 17. Phases of the Moon ... 241

1. Periodical appearance of the Moon. 2. Moon's luminosity. 3. Conditions of Moon's visibility. 4. Preliminaries for computation. 5. Visibility corrections: Ākṣa, Āyana and the Third. 6. Rising and setting of the Moon. 7. Moon's shadow. 8. Computation of Moon's cusps. 9. Moon's cusps—diagram.

##### 18. Heliacal rising and setting of Planets and Stars ... 254

1. Heliacal rising and setting of planets. 2. Days of rising and setting. 3. Planetary elongation for rising and setting. 4. Visibility corrections. 5. Computation of rising and setting. 6. Jupiter's rising and setting. 7. Venus: Rising and setting. 8. Rising and setting of a star. 9. Canopus: Rising.

##### 19. Conjunction of Planets ... 264

1. Types of planetary conjunctions. 2. Conjunction: Principle of computation. 3. Computation of conjunction.

##### 20. Conjunction of Stars and Planets ... 271

1. Conjunction of stars and planets. 2. Principle of planet-star conjunction. 3. Occultation of stars by planets. 4. Occultation of Rohiṇī by planets. 5. Occultation of stars by the Moon. 6. Time of star-planet conjunction.

#### V. INNOVATIVE TRENDS

##### 21. Novel Innovations ... 274

1. True longitude computation on the sphere of the zodiac. 2. Computation of True Moon. 3. Simplified astronomical procedures.

#### IV. OCCULTATION

##### 16. Eclipses ... 196

1. Cause stated in the Ṛgveda. 2. Cause of the lunar eclipse. 3. Lunar eclipse: Principle of computation. 4. Lunar eclipse computation: Vāsiṣṭha and Pauliṣa. 5. —Saurasiddhānta. 6. —Āryabhaṭīya. 7. —Āryabhaṭa's Midnight system. 8. —Emendation by Brahmagupta. 9. —Bhāskara I. 10. —Lalla. 11. —Bhāskara II. 12. —Karaṇaratna. 13. —Śrīpati. 14. —Vākyakaraṇa. 15. —Grahalāghava. 16. Lunar eclipse diagram: Vāsiṣṭha Pauliṣa. 17. —Āryabhaṭa's Midnight system. 18. —Bhāskara I. 19. —Lalla. 20. —Sūryasiddhānta. 21. —Bhāskara II. 22. —Karaṇaratna. 23. Solar eclipse: Computation: Pauliṣa. 24. —Romakasiddhānta. 25. —Saurasiddhānta. 26. —Āryabhaṭa's Midnight system. 27. —Bhāskara I. 28. —Lalla. 29. —Mahāsiddhānta. 30. —Bhāskara II. 31. —Karaṇaratna. 32. —Śrīpati. 33. —Grahalāghava. 34. —Solar eclipse diagram: Romakasiddhānta. 35. —Saurasiddhānta. 36. Colour of eclipses. 37. Conditions for non-prediction of eclipses. 38. —Inscriptional references: Lunar eclipses. 38. Solar eclipses.

##### 17. Phases of the Moon ... 241

1. Periodical appearance of the Moon. 2. Moon's luminosity. 3. Conditions of Moon's visibility. 4. Preliminaries for computation. 5. Visibility corrections: Ākṣa, Āyana and the Third. 6. Rising and setting of the Moon. 7. Moon's shadow. 8. Computation of Moon's cusps. 9. Moon's cusps—diagram.

##### 18. Heliacal rising and setting of Planets and Stars ... 254

1. Heliacal rising and setting of planets. 2. Days of rising and setting. 3. Planetary elongation for rising and setting. 4. Visibility corrections. 5. Computation of rising and setting. 6. Jupiter's rising and setting. 7. Venus: Rising and setting. 8. Rising and setting of a star. 9. Canopus: Rising.

##### 19. Conjunction of Planets ... 264

1. Types of planetary conjunctions. 2. Conjunction: Principle of computation. 3. Computation of conjunction.

##### 20. Conjunction of Stars and Planets ... 271

1. Conjunction of stars and planets. 2. Principle of planet-star conjunction. 3. Occultation of stars by planets. 4. Occultation of Rohiṇī by planets. 5. Occultation of stars by the Moon. 6. Time of star-planet conjunction.

#### V. INNOVATIVE TRENDS

##### 21. Novel Innovations ... 274

1. True longitude computation on the sphere of the zodiac. 2. Computation of True Moon. 3. Simplified astronomical procedures.

#### IV. OCCULTATION

##### 16. Eclipses ... 196

1. Cause stated in the Ṛgveda. 2. Cause of the lunar eclipse. 3. Lunar eclipse: Principle of computation. 4. Lunar eclipse computation: Vāsiṣṭha and Pauliṣa. 5. —Saurasiddhānta. 6. —Āryabhaṭīya. 7. —Āryabhaṭa's Midnight system. 8. —Emendation by Brahmagupta. 9. —Bhāskara I. 10. —Lalla. 11. —Bhāskara II. 12. —Karaṇaratna. 13. —Śrīpati. 14. —Vākyakaraṇa. 15. —Grahalāghava. 16. Lunar eclipse diagram: Vāsiṣṭha Pauliṣa. 17. —Āryabhaṭa's Midnight system. 18. —Bhāskara I. 19. —Lalla. 20. —Sūryasiddhānta. 21. —Bhāskara II. 22. —Karaṇaratna. 23. Solar eclipse: Computation: Pauliṣa. 24. —Romakasiddhānta. 25. —Saurasiddhānta. 26. —Āryabhaṭa's Midnight system. 27. —Bhāskara I. 28. —Lalla. 29. —Mahāsiddhānta. 30. —Bhāskara II. 31. —Karaṇaratna. 32. —Śrīpati. 33. —Grahalāghava. 34. —Solar eclipse diagram: Romakasiddhānta. 35. —Saurasiddhānta. 36. Colour of eclipses. 37. Conditions for non-prediction of eclipses. 38. —Inscriptional references: Lunar eclipses. 38. Solar eclipses.

##### 17. Phases of the Moon ... 241

1. Periodical appearance of the Moon. 2. Moon's luminosity. 3. Conditions of Moon's visibility. 4. Preliminaries for computation. 5. Visibility corrections: Ākṣa, Āyana and the Third. 6. Rising and setting of the Moon. 7. Moon's shadow. 8. Computation of Moon's cusps. 9. Moon's cusps—diagram.

##### 18. Heliacal rising and setting of Planets and Stars ... 254

1. Heliacal rising and setting of planets. 2. Days of rising and setting. 3. Planetary elongation for rising and setting. 4. Visibility corrections. 5. Computation of rising and setting. 6. Jupiter's rising and setting. 7. Venus: Rising and setting. 8. Rising and setting of a star. 9. Canopus: Rising.

##### 19. Conjunction of Planets ... 264

1. Types of planetary conjunctions. 2. Conjunction: Principle of computation. 3. Computation of conjunction.

##### 20. Conjunction of Stars and Planets ... 271

1. Conjunction of stars and planets. 2. Principle of planet-star conjunction. 3. Occultation of stars by planets. 4. Occultation of Rohiṇī by planets. 5. Occultation of stars by the Moon. 6. Time of star-planet conjunction.

#### V. INNOVATIVE TRENDS

##### 21. Novel Innovations ... 274

1. True longitude computation on the sphere of the zodiac. 2. Computation of True Moon. 3. Simplified astronomical procedures.

#### IV. OCCULTATION

##### 16. Eclipses ... 196

1. Cause stated in the Ṛgveda. 2. Cause of the lunar eclipse. 3. Lunar eclipse: Principle of computation. 4. Lunar eclipse computation: Vāsiṣṭha and Pauliṣa. 5. —Saurasiddhānta. 6. —Āryabhaṭīya. 7. —Āryabhaṭa's Midnight system. 8. —Emendation by Brahmagupta. 9. —Bhāskara I. 10. —Lalla. 11. —Bhāskara II. 12. —Karaṇaratna. 13. —Śrīpati. 14. —Vākyakaraṇa. 15. —Grahalāghava. 16. Lunar eclipse diagram: Vāsiṣṭha Pauliṣa. 17. —Āryabhaṭa's Midnight system. 18. —Bhāskara I. 19. —Lalla. 20. —Sūryasiddhānta. 21. —Bhāskara II. 22. —Karaṇaratna. 23. Solar eclipse: Computation: Pauliṣa. 24. —Romakasiddhānta. 25. —Saurasiddhānta. 26. —Āryabhaṭa's Midnight system. 27. —Bhāskara I. 28. —Lalla. 29. —Mahāsiddhānta. 30. —Bhāskara II. 31. —Karaṇaratna. 32. —Śrīpati. 33. —Grahalāghava. 34. —Solar eclipse diagram: Romakasiddhānta. 35. —Saurasiddhānta. 36. Colour of eclipses. 37. Conditions for non-prediction of eclipses. 38. —Inscriptional references: Lunar eclipses. 38. Solar eclipses.

##### 17. Phases of the Moon ... 241

1. Periodical appearance of the Moon. 2. Moon's luminosity. 3. Conditions of Moon's visibility. 4. Preliminaries for computation. 5. Visibility corrections: Ākṣa, Āyana and the Third. 6. Rising and setting of the Moon. 7. Moon's shadow. 8. Computation of Moon's cusps. 9. Moon's cusps—diagram.

##### 18. Heliacal rising and setting of Planets and Stars ... 254

1. Heliacal rising and setting of planets. 2. Days of rising and setting. 3. Planetary elongation for rising and setting. 4. Visibility corrections. 5. Computation of rising and setting. 6. Jupiter's rising and setting. 7. Venus: Rising and setting. 8. Rising and setting of a star. 9. Canopus: Rising.

##### 19. Conjunction of Planets ... 264

1. Types of planetary conjunctions. 2. Conjunction: Principle of computation. 3. Computation of conjunction.

##### 20. Conjunction of Stars and Planets ... 271

1. Conjunction of stars and planets. 2. Principle of planet-star conjunction. 3. Occultation of stars by planets. 4. Occultation of Rohiṇī by planets. 5. Occultation of stars by the Moon. 6. Time of star-planet conjunction.

#### V. INNOVATIVE TRENDS

##### 21. Novel Innovations ... 274

1. True longitude computation on the sphere of the zodiac. 2. Computation of True Moon. 3. Simplified astronomical procedures.

#### IV. OCCULTATION

##### 16. Eclipses ... 196

1. Cause stated in the Ṛgveda. 2. Cause of the lunar eclipse. 3. Lunar eclipse: Principle of computation. 4. Lunar eclipse computation: Vāsiṣṭha and Pauliṣa. 5. —Saurasiddhānta. 6. —Āryabhaṭīya. 7. —Āryabhaṭa's Midnight system. 8. —Emendation by Brahmagupta. 9. —Bhāskara I. 10. —Lalla. 11. —Bhāskara II. 12. —Karaṇaratna. 13. —Śrīpati. 14. —Vākyakaraṇa. 15. —Grahalāghava. 16. Lunar eclipse diagram: Vāsiṣṭha Pauliṣa. 17. —Āryabhaṭa's Midnight system. 18. —Bhāskara I. 19. —Lalla. 20. —Sūryasiddhānta. 21. —Bhāskara II. 22. —Karaṇaratna. 23. Solar eclipse: Computation: Pauliṣa. 24. —Romakasiddhānta. 25. —Saurasiddhānta. 26. —Āryabhaṭa's Midnight system. 27. —Bhāskara I. 28. —Lalla. 29. —Mahāsiddhānta. 30. —Bhāskara II. 31. —Karaṇaratna. 32. —Śrīpati. 33. —Grahalāghava. 34. —Solar eclipse diagram: Romakasiddhānta. 35. —Saurasiddhānta. 36. Colour of eclipses. 37. Conditions for non-prediction of eclipses. 38. —Inscriptional references: Lunar eclipses. 38. Solar eclipses.

##### 17. Phases of the Moon ... 241

1. Periodical appearance of the Moon. 2. Moon's luminosity. 3. Conditions of Moon's visibility. 4. Preliminaries for computation. 5. Visibility corrections: Ākṣa, Āyana and the Third. 6. Rising and setting of the Moon. 7. Moon's shadow. 8. Computation of Moon's cusps. 9. Moon's cusps—diagram.

##### 18. Heliacal rising and setting of Planets and Stars ... 254

1. Heliacal rising and setting of planets. 2. Days of rising and setting. 3. Planetary elongation for rising and setting. 4. Visibility corrections. 5. Computation of rising and setting. 6. Jupiter's rising and setting. 7. Venus: Rising and setting. 8. Rising and setting of a star. 9. Canopus: Rising.

##### 19. Conjunction of Planets ... 264

1. Types of planetary conjunctions. 2. Conjunction: Principle of computation. 3. Computation of conjunction.

##### 20. Conjunction of Stars and Planets ... 271

1. Conjunction of stars and planets. 2. Principle of planet-star conjunction. 3. Occultation of stars by planets. 4. Occultation of Rohiṇī by planets. 5. Occultation of stars by the Moon. 6. Time of star-planet conjunction.

#### V. INNOVATIVE TRENDS

##### 21. Novel Innovations ... 274

1. True longitude computation on the sphere of the zodiac. 2. Computation of True Moon. 3. Simplified astronomical procedures.

#### IV. OCCULTATION

##### 16. Eclipses ... 196

1. Cause stated in the Ṛgveda. 2. Cause of the lunar eclipse. 3. Lunar eclipse: Principle of computation. 4. Lunar eclipse computation: Vāsiṣṭha and Pauliṣa. 5. —Saurasiddhānta. 6. —Āryabhaṭīya. 7. —Āryabhaṭa's Midnight system. 8. —Emendation by Brahmagupta. 9. —Bhāskara I. 10. —Lalla. 11. —Bhāskara II. 12. —Karaṇaratna. 13. —Śrīpati. 14. —Vākyakaraṇa. 15. —Grahalāghava. 16. Lunar eclipse diagram: Vāsiṣṭha Pauliṣa. 17. —Āryabhaṭa's Midnight system. 18. —Bhāskara I. 19. —Lalla. 20. —Sūryasiddhānta. 21. —Bhāskara II. 22. —Karaṇaratna. 23. Solar eclipse: Computation: Pauliṣa. 24. —Romakasiddhānta. 25. —Saurasiddhānta. 26. —Āryabhaṭa's Midnight system. 27. —Bhāskara I. 28. —Lalla. 29. —Mahāsiddhānta. 30. —Bhāskara II. 31. —Karaṇaratna. 32. —Śrīpati. 33. —Grahalāghava. 34. —Solar eclipse diagram: Romakasiddhānta. 35. —Saurasiddhānta. 36. Colour of eclipses. 37. Conditions for non-prediction of eclipses. 38. —Inscriptional references: Lunar eclipses. 38. Solar eclipses.

##### 17. Phases of the Moon ... 241

1. Periodical appearance of the Moon. 2. Moon's luminosity. 3. Conditions of Moon's visibility. 4. Preliminaries for computation. 5. Visibility corrections: Ākṣa, Āyana and the Third. 6. Rising and setting of the Moon. 7. Moon's shadow. 8. Computation of Moon's cusps. 9. Moon's cusps—diagram.

##### 18. Heliacal rising and setting of Planets and Stars ... 254

1. Heliacal rising and setting of planets. 2. Days of rising and setting. 3. Planetary elongation for rising and setting. 4. Visibility corrections. 5. Computation of rising and setting. 6. Jupiter's rising and setting. 7. Venus: Rising and setting. 8. Rising and setting of a star. 9. Canopus: Rising.

##### 19. Conjunction of Planets ... 264

1. Types of planetary conjunctions. 2. Conjunction: Principle of computation. 3. Computation of conjunction.

##### 20. Conjunction of Stars and Planets ... 271

1. Conjunction of stars and planets. 2. Principle of planet-star conjunction. 3. Occultation of stars by planets. 4. Occultation of Rohiṇī by planets. 5. Occultation of stars by the Moon. 6. Time of star-planet conjunction.

#### V. INNOVATIVE TRENDS

##### 21. Novel Innovations ... 274

1. True longitude computation on the sphere of the zodiac. 2. Computation of True Moon. 3. Simplified astronomical procedures.



#### IV. OCCULTATION

##### 16. Eclipses ... 196

1. Cause stated in the Ṛgveda. 2. Cause of the lunar eclipse. 3. Lunar eclipse: Principle of computation. 4. Lunar eclipse computation: Vāsiṣṭha and Pauliṣa. 5. —Saurasiddhānta. 6. —Āryabhaṭīya. 7. —Āryabhaṭa's Midnight system. 8. —Emendation by Brahmagupta. 9. —Bhāskara I. 10. —Lalla. 11. —Bhāskara II. 12. —Karaṇaratna. 13. —Śrīpati. 14. —Vākyakaraṇa. 15. —Grahalāghava. 16. Lunar eclipse diagram: Vāsiṣṭha Pauliṣa. 17. —Āryabhaṭa's Midnight system. 18. —Bhāskara I. 19. —Lalla. 20. —Sūryasiddhānta. 21. —Bhāskara II. 22. —Karaṇaratna. 23. Solar eclipse: Computation: Pauliṣa. 24. —Romakasiddhānta. 25. —Saurasiddhānta. 26. —Āryabhaṭa's Midnight system. 27. —Bhāskara I. 28. —Lalla. 29. —Mahāsiddhānta. 30. —Bhāskara II. 31. —Karaṇaratna. 32. —Śrīpati. 33. —Grahalāghava. 34. —Solar eclipse diagram: Romakasiddhānta. 35. —Saurasiddhānta. 36. Colour of eclipses. 37. Conditions for non-prediction of eclipses. 38. —Inscriptional references: Lunar eclipses. 38. Solar eclipses.

##### 17. Phases of the Moon ... 241

1. Periodical appearance of the Moon. 2. Moon's luminosity. 3. Conditions of Moon's visibility. 4. Preliminaries for computation. 5. Visibility corrections: Ākṣa, Āyana and the Third. 6. Rising and setting of the Moon. 7. Moon's shadow. 8. Computation of Moon's cusps. 9. Moon's cusps—diagram.

##### 18. Heliacal rising and setting of Planets and Stars ... 254

1. Heliacal rising and setting of planets. 2. Days of rising and setting. 3. Planetary elongation for rising and setting. 4. Visibility corrections. 5. Computation of rising and setting. 6. Jupiter's rising and setting. 7. Venus: Rising and setting. 8. Rising and setting of a star. 9. Canopus: Rising.

##### 19. Conjunction of Planets ... 264

1. Types of planetary conjunctions. 2. Conjunction: Principle of computation. 3. Computation of conjunction.

##### 20. Conjunction of Stars and Planets ... 271

1. Conjunction of stars and planets. 2. Principle of planet-star conjunction. 3. Occultation of stars by planets. 4. Occultation of Rohiṇī by planets. 5. Occultation of stars by the Moon. 6. Time of star-planet conjunction.

#### V. INNOVATIVE TRENDS

##### 21. Novel Innovations ... 274

1. True longitude computation on the sphere of the zodiac. 2. Computation of True Moon. 3. Simplified astronomical procedures.

#### IV. OCCULTATION

##### 16. Eclipses ... 196

1. Cause stated in the Ṛgveda. 2. Cause of the lunar eclipse. 3. Lunar eclipse: Principle of computation. 4. Lunar eclipse computation: Vāsiṣṭha and Pauliṣa. 5. —Saurasiddhānta. 6. —Āryabhaṭīya. 7. —Āryabhaṭa's Midnight system. 8. —Emendation by Brahmagupta. 9. —Bhāskara I. 10. —Lalla. 11. —Bhāskara II. 12. —Karaṇaratna. 13. —Śrīpati. 14. —Vākyakaraṇa. 15. —Grahalāghava. 16. Lunar eclipse diagram: Vāsiṣṭha Pauliṣa. 17. —Āryabhaṭa's Midnight system. 18. —Bhāskara I. 19. —Lalla. 20. —Sūryasiddhānta. 21. —Bhāskara II. 22. —Karaṇaratna. 23. Solar eclipse: Computation: Pauliṣa. 24. —Romakasiddhānta. 25. —Saurasiddhānta. 26. —Āryabhaṭa's Midnight system. 27. —Bhāskara I. 28. —Lalla. 29. —Mahāsiddhānta. 30. —Bhāskara II. 31. —Karaṇaratna. 32. —Śrīpati. 33. —Grahalāghava. 34. —Solar eclipse diagram: Romakasiddhānta. 35. —Saurasiddhānta. 36. Colour of eclipses. 37. Conditions for non-prediction of eclipses. 38. —Inscriptional references: Lunar eclipses. 38. Solar eclipses.

##### 17. Phases of the Moon ... 241

1. Periodical appearance of the Moon. 2. Moon's luminosity. 3. Conditions of Moon's visibility. 4. Preliminaries for computation. 5. Visibility corrections: Ākṣa, Āyana and the Third. 6. Rising and setting of the Moon. 7. Moon's shadow. 8. Computation of Moon's cusps. 9. Moon's cusps—diagram.

##### 18. Heliacal rising and setting of Planets and Stars ... 254

1. Heliacal rising and setting of planets. 2. Days of rising and setting. 3. Planetary elongation for rising and setting. 4. Visibility corrections. 5. Computation of rising and setting. 6. Jupiter's rising and setting. 7. Venus: Rising and setting. 8. Rising and setting of a star. 9. Canopus: Rising.

##### 19. Conjunction of Planets ... 264

1. Types of planetary conjunctions. 2. Conjunction: Principle of computation. 3. Computation of conjunction.

##### 20. Conjunction of Stars and Planets ... 271

1. Conjunction of stars and planets. 2. Principle of planet-star conjunction. 3. Occultation of stars by planets. 4. Occultation of Rohiṇī by planets. 5. Occultation of stars by the Moon. 6. Time of star-planet conjunction.

#### V. INNOVATIVE TRENDS

##### 21. Novel Innovations ... 274

1. True longitude computation on the sphere of the zodiac. 2. Computation of True Moon. 3. Simplified astronomical procedures.

#### IV. OCCULTATION

##### 16. Eclipses ... 196

1. Cause stated in the Ṛgveda. 2. Cause of the lunar eclipse. 3. Lunar eclipse: Principle of computation. 4. Lunar eclipse computation: Vāsiṣṭha and Pauliṣa. 5. —Saurasiddhānta. 6. —Āryabhaṭīya. 7. —Āryabhaṭa's Midnight system. 8. —Emendation by Brahmagupta. 9. —Bhāskara I. 10. —Lalla. 11. —Bhāskara II. 12. —Karaṇaratna. 13. —Śrīpati. 14. —Vākyakaraṇa. 15. —Grahalāghava. 16. Lunar eclipse diagram: Vāsiṣṭha Pauliṣa. 17. —Āryabhaṭa's Midnight system. 18. —Bhāskara I. 19. —Lalla. 20. —Sūryasiddhānta. 21. —Bhāskara II. 22. —Karaṇaratna. 23. Solar eclipse: Computation: Pauliṣa. 24. —Romakasiddhānta. 25. —Saurasiddhānta. 26. —Āryabhaṭa's Midnight system. 27. —Bhāskara I. 28. —Lalla. 29. —Mahāsiddhānta. 30. —Bhāskara II. 31. —Karaṇaratna. 32. —Śrīpati. 33. —Grahalāghava. 34. —Solar eclipse diagram: Romakasiddhānta. 35. —Saurasiddhānta. 36. Colour of eclipses. 37. Conditions for non-prediction of eclipses. 38. —Inscriptional references: Lunar eclipses. 38. Solar eclipses.

##### 17. Phases of the Moon ... 241

1. Periodical appearance of the Moon. 2. Moon's luminosity. 3. Conditions of Moon's visibility. 4. Preliminaries for computation. 5. Visibility corrections: Ākṣa, Āyana and the Third. 6. Rising and setting of the Moon. 7. Moon's shadow. 8. Computation of Moon's cusps. 9. Moon's cusps—diagram.

##### 18. Heliacal rising and setting of Planets and Stars ... 254

1. Heliacal rising and setting of planets. 2. Days of rising and setting. 3. Planetary elongation for rising and setting. 4. Visibility corrections. 5. Computation of rising and setting. 6. Jupiter's rising and setting. 7. Venus: Rising and setting. 8. Rising and setting of a star. 9. Canopus: Rising.

##### 19. Conjunction of Planets ... 264

1. Types of planetary conjunctions. 2. Conjunction: Principle of computation. 3. Computation of conjunction.

##### 20. Conjunction of Stars and Planets ... 271

1. Conjunction of stars and planets. 2. Principle of planet-star conjunction. 3. Occultation of stars by planets. 4. Occultation of Rohiṇī by planets. 5. Occultation of stars by the Moon. 6. Time of star-planet conjunction.

#### V. INNOVATIVE TRENDS

##### 21. Novel Innovations ... 274

1. True longitude computation on the sphere of the zodiac. 2. Computation of True Moon. 3. Simplified astronomical procedures.

#### IV. OCCULTATION

##### 16. Eclipses ... 196

1. Cause stated in the Ṛgveda. 2. Cause of the lunar eclipse. 3. Lunar eclipse: Principle of computation. 4. Lunar eclipse computation: Vāsiṣṭha and Pauliṣa. 5. —Saurasiddhānta. 6. —Āryabhaṭīya. 7. —Āryabhaṭa's Midnight system. 8. —Emendation by Brahmagupta. 9. —Bhāskara I. 10. —Lalla. 11. —Bhāskara II. 12. —Karaṇaratna. 13. —Śrīpati. 14. —Vākyakaraṇa. 15. —Grahalāghava. 16. Lunar eclipse diagram: Vāsiṣṭha Pauliṣa. 17. —Āryabhaṭa's Midnight system. 18. —Bhāskara I. 19. —Lalla. 20. —Sūryasiddhānta. 21. —Bhāskara II. 22. —Karaṇaratna. 23. Solar eclipse: Computation: Pauliṣa. 24. —Romakasiddhānta. 25. —Saurasiddhānta. 26. —Āryabhaṭa's Midnight system. 27. —Bhāskara I. 28. —Lalla. 29. —Mahāsiddhānta. 30. —Bhāskara II. 31. —Karaṇaratna. 32. —Śrīpati. 33. —Grahalāghava. 34. —Solar eclipse diagram: Romakasiddhānta. 35. —Saurasiddhānta. 36. Colour of eclipses. 37. Conditions for non-prediction of eclipses. 38. —Inscriptional references: Lunar eclipses. 38. Solar eclipses.

##### 17. Phases of the Moon ... 241

1. Periodical appearance of the Moon. 2. Moon's luminosity. 3. Conditions of Moon's visibility. 4. Preliminaries for computation. 5. Visibility corrections: Ākṣa, Āyana and the Third. 6. Rising and setting of the Moon. 7. Moon's shadow. 8. Computation of Moon's cusps. 9. Moon's cusps—diagram.

##### 18. Heliacal rising and setting of Planets and Stars ... 254

1. Heliacal rising and setting of planets. 2. Days of rising and setting. 3. Planetary elongation for rising and setting. 4. Visibility corrections. 5. Computation of rising and setting. 6. Jupiter's rising and setting. 7. Venus: Rising and setting. 8. Rising and setting of a star. 9. Canopus: Rising.

##### 19. Conjunction of Planets ... 264

1. Types of planetary conjunctions. 2. Conjunction: Principle of computation. 3. Computation of conjunction.

##### 20. Conjunction of Stars and Planets ... 271

1. Conjunction of stars and planets. 2. Principle of planet-star conjunction. 3. Occultation of stars by planets. 4. Occultation of Rohiṇī by planets. 5. Occultation of stars by the Moon. 6. Time of star-planet conjunction.

#### V. INNOVATIVE TRENDS

##### 21. Novel Innovations ... 274

1. True longitude computation on the sphere of the zodiac. 2. Computation of True Moon. 3. Simplified astronomical procedures.

#### IV. OCCULTATION

##### 16. Eclipses ... 196

1. Cause stated in the Ṛgveda. 2. Cause of the lunar eclipse. 3. Lunar eclipse: Principle of computation. 4. Lunar eclipse computation: Vāsiṣṭha and Pauliṣa. 5. —Saurasiddhānta. 6. —Āryabhaṭīya. 7. —Āryabhaṭa's Midnight system. 8. —Emendation by Brahmagupta. 9. —Bhāskara I. 10. —Lalla. 11. —Bhāskara II. 12. —Karaṇaratna. 13. —Śrīpati. 14. —Vākyakaraṇa. 15. —Grahalāghava. 16. Lunar eclipse diagram: Vāsiṣṭha Pauliṣa. 17. —Āryabhaṭa's Midnight system. 18. —Bhāskara I. 19. —Lalla. 20. —Sūryasiddhānta. 21. —Bhāskara II. 22. —Karaṇaratna. 23. Solar eclipse: Computation: Pauliṣa. 24. —Romakasiddhānta. 25. —Saurasiddhānta. 26. —Āryabhaṭa's Midnight system. 27. —Bhāskara I. 28. —Lalla. 29. —Mahāsiddhānta. 30. —Bhāskara II. 31. —Karaṇaratna. 32. —Śrīpati. 33. —Grahalāghava. 34. —Solar eclipse diagram: Romakasiddhānta. 35. —Saurasiddhānta. 36. Colour of eclipses. 37. Conditions for non-prediction of eclipses. 38. —Inscriptional references: Lunar eclipses. 38. Solar eclipses.

##### 17. Phases of the Moon ... 241

1. Periodical appearance of the Moon. 2. Moon's luminosity. 3. Conditions of Moon's visibility. 4. Preliminaries for computation. 5. Visibility corrections: Ākṣa, Āyana and the Third. 6. Rising and setting of the Moon. 7. Moon's shadow. 8. Computation of Moon's cusps. 9. Moon's cusps—diagram.

##### 18. Heliacal rising and setting of Planets and Stars ... 254

1. Heliacal rising and setting of planets. 2. Days of rising and setting. 3. Planetary elongation for rising and setting. 4. Visibility corrections. 5. Computation of rising and setting. 6. Jupiter's rising and setting. 7. Venus: Rising and setting. 8. Rising and setting of a star. 9. Canopus: Rising.

##### 19. Conjunction of Planets ... 264

1. Types of planetary conjunctions. 2. Conjunction: Principle of computation. 3. Computation of conjunction.

##### 20. Conjunction of Stars and Planets ... 271

1. Conjunction of stars and planets. 2. Principle of planet-star conjunction. 3. Occultation of stars by planets. 4. Occultation of Rohiṇī by planets. 5. Occultation of stars by the Moon. 6. Time of star-planet conjunction.

#### V. INNOVATIVE TRENDS

##### 21. Novel Innovations ... 274

1. True longitude computation on the sphere of the zodiac. 2. Computation of True Moon. 3. Simplified astronomical procedures.

#### IV. OCCULTATION

##### 16. Eclipses ... 196

1. Cause stated in the Ṛgveda. 2. Cause of the lunar eclipse. 3. Lunar eclipse: Principle of computation. 4. Lunar eclipse computation: Vāsiṣṭha and Pauliṣa. 5. —Saurasiddhānta. 6. —Āryabhaṭīya. 7. —Āryabhaṭa's Midnight system. 8. —Emendation by Brahmagupta. 9. —Bhāskara I. 10. —Lalla. 11. —Bhāskara II. 12. —Karaṇaratna. 13. —Śrīpati. 14. —Vākyakaraṇa. 15. —Grahalāghava. 16. Lunar eclipse diagram: Vāsiṣṭha Pauliṣa. 17. —Āryabhaṭa's Midnight system. 18. —Bhāskara I. 19. —Lalla. 20. —Sūryasiddhānta. 21. —Bhāskara II. 22. —Karaṇaratna. 23. Solar eclipse: Computation: Pauliṣa. 24. —Romakasiddhānta. 25. —Saurasiddhānta. 26. —Āryabhaṭa's Midnight system. 27. —Bhāskara I. 28. —Lalla. 29. —Mahāsiddhānta. 30. —Bhāskara II. 31. —Karaṇaratna. 32. —Śrīpati. 33. —Grahalāghava. 34. —Solar eclipse diagram: Romakasiddhānta. 35. —Saurasiddhānta. 36. Colour of eclipses. 37. Conditions for non-prediction of eclipses. 38. —Inscriptional references: Lunar eclipses. 38. Solar eclipses.

##### 17. Phases of the Moon ... 241

1. Periodical appearance of the Moon. 2. Moon's luminosity. 3. Conditions of Moon's visibility. 4. Preliminaries for computation. 5. Visibility corrections: Ākṣa, Āyana and the Third. 6. Rising and setting of the Moon. 7. Moon's shadow. 8. Computation of Moon's cusps. 9. Moon's cusps—diagram.

##### 18. Heliacal rising and setting of Planets and Stars ... 254

1. Heliacal rising and setting of planets. 2. Days of rising and setting. 3. Planetary elongation for rising and setting. 4. Visibility corrections. 5. Computation of rising and setting. 6. Jupiter's rising and setting. 7. Venus: Rising and setting. 8. Rising and setting of a star. 9. Canopus: Rising.

##### 19. Conjunction of Planets ... 264

1. Types of planetary conjunctions. 2. Conjunction: Principle of computation. 3. Computation of conjunction.

##### 20. Conjunction of Stars and Planets ... 271

1. Conjunction of stars and planets. 2. Principle of planet-star conjunction. 3. Occultation of stars by planets. 4. Occultation of Rohiṇī by planets. 5. Occultation of stars by the Moon. 6. Time of star-planet conjunction.

#### V. INNOVATIVE TRENDS

##### 21. Novel Innovations ... 274

1. True longitude computation on the sphere of the zodiac. 2. Computation of True Moon. 3. Simplified astronomical procedures.

#### IV. OCCULTATION

##### 16. Eclipses ... 196

1. Cause stated in the Ṛgveda. 2. Cause of the lunar eclipse. 3. Lunar eclipse: Principle of computation. 4. Lunar eclipse computation: Vāsiṣṭha and Pauliṣa. 5. —Saurasiddhānta. 6. —Āryabhaṭīya. 7. —Āryabhaṭa's Midnight system. 8. —Emendation by Brahmagupta. 9. —Bhāskara I. 10. —Lalla. 11. —Bhāskara II. 12. —Karaṇaratna. 13. —Śrīpati. 14. —Vākyakaraṇa. 15. —Grahalāghava. 16. Lunar eclipse diagram: Vāsiṣṭha Pauliṣa. 17. —Āryabhaṭa's Midnight system. 18. —Bhāskara I. 19. —Lalla. 20. —Sūryasiddhānta. 21. —Bhāskara II. 22. —Karaṇaratna. 23. Solar eclipse: Computation: Pauliṣa. 24. —Romakasiddhānta. 25. —Saurasiddhānta. 26. —Āryabhaṭa's Midnight system. 27. —Bhāskara I. 28. —Lalla. 29. —Mahāsiddhānta. 30. —Bhāskara II. 31. —Karaṇaratna. 32. —Śrīpati. 33. —Grahalāghava. 34. —Solar eclipse diagram: Romakasiddhānta. 35. —Saurasiddhānta. 36. Colour of eclipses. 37. Conditions for non-prediction of eclipses. 38. —Inscriptional references: Lunar eclipses. 38. Solar eclipses.

##### 17. Phases of the Moon ... 241

1. Periodical appearance of the Moon. 2. Moon's luminosity. 3. Conditions of Moon's visibility. 4. Preliminaries for computation. 5. Visibility corrections: Ākṣa, Āyana and the Third. 6. Rising and setting of the Moon. 7. Moon's shadow. 8. Computation of Moon's cusps. 9. Moon's cusps—diagram.

##### 18. Heliacal rising and setting of Planets and Stars ... 254

1. Heliacal rising and setting of planets. 2. Days of rising and setting. 3. Planetary elongation for rising and setting. 4. Visibility corrections. 5. Computation of rising and setting. 6. Jupiter's rising and setting. 7. Venus: Rising and setting. 8. Rising and setting of a star. 9. Canopus: Rising.

##### 19. Conjunction of Planets ... 264

1. Types of planetary conjunctions. 2. Conjunction: Principle of computation. 3. Computation of conjunction.

##### 20. Conjunction of Stars and Planets ... 271

1. Conjunction of stars and planets. 2. Principle of planet-star conjunction. 3. Occultation of stars by planets. 4. Occultation of Rohiṇī by planets. 5. Occultation of stars by the Moon. 6. Time of star-planet conjunction.

#### V. INNOVATIVE TRENDS

##### 21. Novel Innovations ... 274

1. True longitude computation on the sphere of the zodiac. 2. Computation of True Moon. 3. Simplified astronomical procedures.

#### IV. OCCULTATION

##### 16. Eclipses ... 196

1. Cause stated in the Ṛgveda. 2. Cause of the lunar eclipse. 3. Lunar eclipse: Principle of computation. 4. Lunar eclipse computation: Vāsiṣṭha and Pauliṣa. 5. —Saurasiddhānta. 6. —Āryabhaṭīya. 7. —Āryabhaṭa's Midnight system. 8. —Emendation by Brahmagupta. 9. —Bhāskara I. 10. —Lalla. 11. —Bhāskara II. 12. —Karaṇaratna. 13. —Śrīpati. 14. —Vākyakaraṇa. 15. —Grahalāghava. 16. Lunar eclipse diagram: Vāsiṣṭha Pauliṣa. 17. —Āryabhaṭa's Midnight system. 18. —Bhāskara I. 19. —Lalla. 20. —Sūryasiddhānta. 21. —Bhāskara II. 22. —Karaṇaratna. 23. Solar eclipse: Computation: Pauliṣa. 24. —Romakasiddhānta. 25. —Saurasiddhānta. 26. —Āryabhaṭa's Midnight system. 27. —Bhāskara I. 28. —Lalla. 29. —Mahāsiddhānta. 30. —Bhāskara II. 31. —Karaṇaratna. 32. —Śrīpati. 33. —Grahalāghava. 34. —Solar eclipse diagram: Romakasiddhānta. 35. —Saurasiddhānta. 36. Colour of eclipses. 37. Conditions for non-prediction of eclipses. 38. —Inscriptional references: Lunar eclipses. 38. Solar eclipses.

##### 17. Phases of the Moon ... 241

1. Periodical appearance of the Moon. 2. Moon's luminosity. 3. Conditions of Moon's visibility. 4. Preliminaries for computation. 5. Visibility corrections: Ākṣa, Āyana and the Third. 6. Rising and setting of the Moon. 7. Moon's shadow. 8. Computation of Moon's cusps. 9. Moon's cusps—diagram.

##### 18. Heliacal rising and setting of Planets and Stars ... 254

1. Heliacal rising and setting of planets. 2. Days of rising and setting. 3. Planetary elongation for rising and setting. 4. Visibility corrections. 5. Computation of rising and setting. 6. Jupiter's rising and setting. 7. Venus: Rising and setting. 8. Rising and setting of a star. 9. Canopus: Rising.

##### 19. Conjunction of Planets ... 264

1. Types of planetary conjunctions. 2. Conjunction: Principle of computation. 3. Computation of conjunction.

##### 20. Conjunction of Stars and Planets ... 271

1. Conjunction of stars and planets. 2. Principle of planet-star conjunction. 3. Occultation of stars by planets. 4. Occultation of Rohiṇī by planets. 5. Occultation of stars by the Moon. 6. Time of star-planet conjunction.

#### V. INNOVATIVE TRENDS

##### 21. Novel Innovations ... 274

1. True longitude computation on the sphere of the zodiac. 2. Computation of True Moon. 3. Simplified astronomical procedures.



#### IV. OCCULTATION

##### 16. Eclipses ... 196

1. Cause stated in the Ṛgveda. 2. Cause of the lunar eclipse. 3. Lunar eclipse: Principle of computation. 4. Lunar eclipse computation: Vāsiṣṭha and Pauliṣa. 5. —Saurasiddhānta. 6. —Āryabhaṭīya. 7. —Āryabhaṭa's Midnight system. 8. —Emendation by Brahmagupta. 9. —Bhāskara I. 10. —Lalla. 11. —Bhāskara II. 12. —Karaṇaratna. 13. —Śrīpati. 14. —Vākyakaraṇa. 15. —Grahalāghava. 16. Lunar eclipse diagram: Vāsiṣṭha Pauliṣa. 17. —Āryabhaṭa's Midnight system. 18. —Bhāskara I. 19. —Lalla. 20. —Sūryasiddhānta. 21. —Bhāskara II. 22. —Karaṇaratna. 23. Solar eclipse: Computation: Pauliṣa. 24. —Romakasiddhānta. 25. —Saurasiddhānta. 26. —Āryabhaṭa's Midnight system. 27. —Bhāskara I. 28. —Lalla. 29. —Mahāsiddhānta. 30. —Bhāskara II. 31. —Karaṇaratna. 32. —Śrīpati. 33. —Grahalāghava. 34. —Solar eclipse diagram: Romakasiddhānta. 35. —Saurasiddhānta. 36. Colour of eclipses. 37. Conditions for non-prediction of eclipses. 38. —Inscriptional references: Lunar eclipses. 38. Solar eclipses.

##### 17. Phases of the Moon ... 241

1. Periodical appearance of the Moon. 2. Moon's luminosity. 3. Conditions of Moon's visibility. 4. Preliminaries for computation. 5. Visibility corrections: Ākṣa, Āyana and the Third. 6. Rising and setting of the Moon. 7. Moon's shadow. 8. Computation of Moon's cusps. 9. Moon's cusps—diagram.

##### 18. Heliacal rising and setting of Planets and Stars ... 254

1. Heliacal rising and setting of planets. 2. Days of rising and setting. 3. Planetary elongation for rising and setting. 4. Visibility corrections. 5. Computation of rising and setting. 6. Jupiter's rising and setting. 7. Venus: Rising and setting. 8. Rising and setting of a star. 9. Canopus: Rising.

##### 19. Conjunction of Planets ... 264

1. Types of planetary conjunctions. 2. Conjunction: Principle of computation. 3. Computation of conjunction.

##### 20. Conjunction of Stars and Planets ... 271

1. Conjunction of stars and planets. 2. Principle of planet-star conjunction. 3. Occultation of stars by planets. 4. Occultation of Rohiṇī by planets. 5. Occultation of stars by the Moon. 6. Time of star-planet conjunction.

#### V. INNOVATIVE TRENDS

##### 21. Novel Innovations ... 274

1. True longitude computation on the sphere of the zodiac. 2. Computation of True Moon. 3. Simplified astronomical procedures.

#### IV. OCCULTATION

##### 16. Eclipses ... 196

1. Cause stated in the Ṛgveda. 2. Cause of the lunar eclipse. 3. Lunar eclipse: Principle of computation. 4. Lunar eclipse computation: Vāsiṣṭha and Pauliṣa. 5. —Saurasiddhānta. 6. —Āryabhaṭīya. 7. —Āryabhaṭa's Midnight system. 8. —Emendation by Brahmagupta. 9. —Bhāskara I. 10. —Lalla. 11. —Bhāskara II. 12. —Karaṇaratna. 13. —Śrīpati. 14. —Vākyakaraṇa. 15. —Grahalāghava. 16. Lunar eclipse diagram: Vāsiṣṭha Pauliṣa. 17. —Āryabhaṭa's Midnight system. 18. —Bhāskara I. 19. —Lalla. 20. —Sūryasiddhānta. 21. —Bhāskara II. 22. —Karaṇaratna. 23. Solar eclipse: Computation: Pauliṣa. 24. —Romakasiddhānta. 25. —Saurasiddhānta. 26. —Āryabhaṭa's Midnight system. 27. —Bhāskara I. 28. —Lalla. 29. —Mahāsiddhānta. 30. —Bhāskara II. 31. —Karaṇaratna. 32. —Śrīpati. 33. —Grahalāghava. 34. —Solar eclipse diagram: Romakasiddhānta. 35. —Saurasiddhānta. 36. Colour of eclipses. 37. Conditions for non-prediction of eclipses. 38. —Inscriptional references: Lunar eclipses. 38. Solar eclipses.

##### 17. Phases of the Moon ... 241

1. Periodical appearance of the Moon. 2. Moon's luminosity. 3. Conditions of Moon's visibility. 4. Preliminaries for computation. 5. Visibility corrections: Ākṣa, Āyana and the Third. 6. Rising and setting of the Moon. 7. Moon's shadow. 8. Computation of Moon's cusps. 9. Moon's cusps—diagram.

##### 18. Heliacal rising and setting of Planets and Stars ... 254

1. Heliacal rising and setting of planets. 2. Days of rising and setting. 3. Planetary elongation for rising and setting. 4. Visibility corrections. 5. Computation of rising and setting. 6. Jupiter's rising and setting. 7. Venus: Rising and setting. 8. Rising and setting of a star. 9. Canopus: Rising.

##### 19. Conjunction of Planets ... 264

1. Types of planetary conjunctions. 2. Conjunction: Principle of computation. 3. Computation of conjunction.

##### 20. Conjunction of Stars and Planets ... 271

1. Conjunction of stars and planets. 2. Principle of planet-star conjunction. 3. Occultation of stars by planets. 4. Occultation of Rohiṇī by planets. 5. Occultation of stars by the Moon. 6. Time of star-planet conjunction.

#### V. INNOVATIVE TRENDS

##### 21. Novel Innovations ... 274

1. True longitude computation on the sphere of the zodiac. 2. Computation of True Moon. 3. Simplified astronomical procedures.

#### IV. OCCULTATION

##### 16. Eclipses ... 196

1. Cause stated in the Ṛgveda. 2. Cause of the lunar eclipse. 3. Lunar eclipse: Principle of computation. 4. Lunar eclipse computation: Vāsiṣṭha and Pauliṣa. 5. —Saurasiddhānta. 6. —Āryabhaṭīya. 7. —Āryabhaṭa's Midnight system. 8. —Emendation by Brahmagupta. 9. —Bhāskara I. 10. —Lalla. 11. —Bhāskara II. 12. —Karaṇaratna. 13. —Śrīpati. 14. —Vākyakaraṇa. 15. —Grahalāghava. 16. Lunar eclipse diagram: Vāsiṣṭha Pauliṣa. 17. —Āryabhaṭa's Midnight system. 18. —Bhāskara I. 19. —Lalla. 20. —Sūryasiddhānta. 21. —Bhāskara II. 22. —Karaṇaratna. 23. Solar eclipse: Computation: Pauliṣa. 24. —Romakasiddhānta. 25. —Saurasiddhānta. 26. —Āryabhaṭa's Midnight system. 27. —Bhāskara I. 28. —Lalla. 29. —Mahāsiddhānta. 30. —Bhāskara II. 31. —Karaṇaratna. 32. —Śrīpati. 33. —Grahalāghava. 34. —Solar eclipse diagram: Romakasiddhānta. 35. —Saurasiddhānta. 36. Colour of eclipses. 37. Conditions for non-prediction of eclipses. 38. —Inscriptional references: Lunar eclipses. 38. Solar eclipses.

##### 17. Phases of the Moon ... 241

1. Periodical appearance of the Moon. 2. Moon's luminosity. 3. Conditions of Moon's visibility. 4. Preliminaries for computation. 5. Visibility corrections: Ākṣa, Āyana and the Third. 6. Rising and setting of the Moon. 7. Moon's shadow. 8. Computation of Moon's cusps. 9. Moon's cusps—diagram.

##### 18. Heliacal rising and setting of Planets and Stars ... 254

1. Heliacal rising and setting of planets. 2. Days of rising and setting. 3. Planetary elongation for rising and setting. 4. Visibility corrections. 5. Computation of rising and setting. 6. Jupiter's rising and setting. 7. Venus: Rising and setting. 8. Rising and setting of a star. 9. Canopus: Rising.

##### 19. Conjunction of Planets ... 264

1. Types of planetary conjunctions. 2. Conjunction: Principle of computation. 3. Computation of conjunction.

##### 20. Conjunction of Stars and Planets ... 271

1. Conjunction of stars and planets. 2. Principle of planet-star conjunction. 3. Occultation of stars by planets. 4. Occultation of Rohiṇī by planets. 5. Occultation of stars by the Moon. 6. Time of star-planet conjunction.

#### V. INNOVATIVE TRENDS

##### 21. Novel Innovations ... 274

1. True longitude computation on the sphere of the zodiac. 2. Computation of True Moon. 3. Simplified astronomical procedures.

#### IV. OCCULTATION

##### 16. Eclipses ... 196

1. Cause stated in the Ṛgveda. 2. Cause of the lunar eclipse. 3. Lunar eclipse: Principle of computation. 4. Lunar eclipse computation: Vāsiṣṭha and Pauliṣa. 5. —Saurasiddhānta. 6. —Āryabhaṭīya. 7. —Āryabhaṭa's Midnight system. 8. —Emendation by Brahmagupta. 9. —Bhāskara I. 10. —Lalla. 11. —Bhāskara II. 12. —Karaṇaratna. 13. —Śrīpati. 14. —Vākyakaraṇa. 15. —Grahalāghava. 16. Lunar eclipse diagram: Vāsiṣṭha Pauliṣa. 17. —Āryabhaṭa's Midnight system. 18. —Bhāskara I. 19. —Lalla. 20. —Sūryasiddhānta. 21. —Bhāskara II. 22. —Karaṇaratna. 23. Solar eclipse: Computation: Pauliṣa. 24. —Romakasiddhānta. 25. —Saurasiddhānta. 26. —Āryabhaṭa's Midnight system. 27. —Bhāskara I. 28. —Lalla. 29. —Mahāsiddhānta. 30. —Bhāskara II. 31. —Karaṇaratna. 32. —Śrīpati. 33. —Grahalāghava. 34. —Solar eclipse diagram: Romakasiddhānta. 35. —Saurasiddhānta. 36. Colour of eclipses. 37. Conditions for non-prediction of eclipses. 38. —Inscriptional references: Lunar eclipses. 38. Solar eclipses.

##### 17. Phases of the Moon ... 241

1. Periodical appearance of the Moon. 2. Moon's luminosity. 3. Conditions of Moon's visibility. 4. Preliminaries for computation. 5. Visibility corrections: Ākṣa, Āyana and the Third. 6. Rising and setting of the Moon. 7. Moon's shadow. 8. Computation of Moon's cusps. 9. Moon's cusps—diagram.

##### 18. Heliacal rising and setting of Planets and Stars ... 254

1. Heliacal rising and setting of planets. 2. Days of rising and setting. 3. Planetary elongation for rising and setting. 4. Visibility corrections. 5. Computation of rising and setting. 6. Jupiter's rising and setting. 7. Venus: Rising and setting. 8. Rising and setting of a star. 9. Canopus: Rising.

##### 19. Conjunction of Planets ... 264

1. Types of planetary conjunctions. 2. Conjunction: Principle of computation. 3. Computation of conjunction.

##### 20. Conjunction of Stars and Planets ... 271

1. Conjunction of stars and planets. 2. Principle of planet-star conjunction. 3. Occultation of stars by planets. 4. Occultation of Rohiṇī by planets. 5. Occultation of stars by the Moon. 6. Time of star-planet conjunction.

#### V. INNOVATIVE TRENDS

##### 21. Novel Innovations ... 274

1. True longitude computation on the sphere of the zodiac. 2. Computation of True Moon. 3. Simplified astronomical procedures.

#### IV. OCCULTATION

##### 16. Eclipses ... 196

1. Cause stated in the Ṛgveda. 2. Cause of the lunar eclipse. 3. Lunar eclipse: Principle of computation. 4. Lunar eclipse computation: Vāsiṣṭha and Pauliṣa. 5. —Saurasiddhānta. 6. —Āryabhaṭīya. 7. —Āryabhaṭa's Midnight system. 8. —Emendation by Brahmagupta. 9. —Bhāskara I. 10. —Lalla. 11. —Bhāskara II. 12. —Karaṇaratna. 13. —Śrīpati. 14. —Vākyakaraṇa. 15. —Grahalāghava. 16. Lunar eclipse diagram: Vāsiṣṭha Pauliṣa. 17. —Āryabhaṭa's Midnight system. 18. —Bhāskara I. 19. —Lalla. 20. —Sūryasiddhānta. 21. —Bhāskara II. 22. —Karaṇaratna. 23. Solar eclipse: Computation: Pauliṣa. 24. —Romakasiddhānta. 25. —Saurasiddhānta. 26. —Āryabhaṭa's Midnight system. 27. —Bhāskara I. 28. —Lalla. 29. —Mahāsiddhānta. 30. —Bhāskara II. 31. —Karaṇaratna. 32. —Śrīpati. 33. —Grahalāghava. 34. —Solar eclipse diagram: Romakasiddhānta. 35. —Saurasiddhānta. 36. Colour of eclipses. 37. Conditions for non-prediction of eclipses. 38. —Inscriptional references: Lunar eclipses. 38. Solar eclipses.

##### 17. Phases of the Moon ... 241

1. Periodical appearance of the Moon. 2. Moon's luminosity. 3. Conditions of Moon's visibility. 4. Preliminaries for computation. 5. Visibility corrections: Ākṣa, Āyana and the Third. 6. Rising and setting of the Moon. 7. Moon's shadow. 8. Computation of Moon's cusps. 9. Moon's cusps—diagram.

##### 18. Heliacal rising and setting of Planets and Stars ... 254

1. Heliacal rising and setting of planets. 2. Days of rising and setting. 3. Planetary elongation for rising and setting. 4. Visibility corrections. 5. Computation of rising and setting. 6. Jupiter's rising and setting. 7. Venus: Rising and setting. 8. Rising and setting of a star. 9. Canopus: Rising.

##### 19. Conjunction of Planets ... 264

1. Types of planetary conjunctions. 2. Conjunction: Principle of computation. 3. Computation of conjunction.

##### 20. Conjunction of Stars and Planets ... 271

1. Conjunction of stars and planets. 2. Principle of planet-star conjunction. 3. Occultation of stars by planets. 4. Occultation of Rohiṇī by planets. 5. Occultation of stars by the Moon. 6. Time of star-planet conjunction.

#### V. INNOVATIVE TRENDS

##### 21. Novel Innovations ... 274

1. True longitude computation on the sphere of the zodiac. 2. Computation of True Moon. 3. Simplified astronomical procedures.

#### IV. OCCULTATION

##### 16. Eclipses ... 196

1. Cause stated in the Ṛgveda. 2. Cause of the lunar eclipse. 3. Lunar eclipse: Principle of computation. 4. Lunar eclipse computation: Vāsiṣṭha and Pauliṣa. 5. —Saurasiddhānta. 6. —Āryabhaṭīya. 7. —Āryabhaṭa's Midnight system. 8. —Emendation by Brahmagupta. 9. —Bhāskara I. 10. —Lalla. 11. —Bhāskara II. 12. —Karaṇaratna. 13. —Śrīpati. 14. —Vākyakaraṇa. 15. —Grahalāghava. 16. Lunar eclipse diagram: Vāsiṣṭha Pauliṣa. 17. —Āryabhaṭa's Midnight system. 18. —Bhāskara I. 19. —Lalla. 20. —Sūryasiddhānta. 21. —Bhāskara II. 22. —Karaṇaratna. 23. Solar eclipse: Computation: Pauliṣa. 24. —Romakasiddhānta. 25. —Saurasiddhānta. 26. —Āryabhaṭa's Midnight system. 27. —Bhāskara I. 28. —Lalla. 29. —Mahāsiddhānta. 30. —Bhāskara II. 31. —Karaṇaratna. 32. —Śrīpati. 33. —Grahalāghava. 34. —Solar eclipse diagram: Romakasiddhānta. 35. —Saurasiddhānta. 36. Colour of eclipses. 37. Conditions for non-prediction of eclipses. 38. —Inscriptional references: Lunar eclipses. 38. Solar eclipses.

##### 17. Phases of the Moon ... 241

1. Periodical appearance of the Moon. 2. Moon's luminosity. 3. Conditions of Moon's visibility. 4. Preliminaries for computation. 5. Visibility corrections: Ākṣa, Āyana and the Third. 6. Rising and setting of the Moon. 7. Moon's shadow. 8. Computation of Moon's cusps. 9. Moon's cusps—diagram.

##### 18. Heliacal rising and setting of Planets and Stars ... 254

1. Heliacal rising and setting of planets. 2. Days of rising and setting. 3. Planetary elongation for rising and setting. 4. Visibility corrections. 5. Computation of rising and setting. 6. Jupiter's rising and setting. 7. Venus: Rising and setting. 8. Rising and setting of a star. 9. Canopus: Rising.

##### 19. Conjunction of Planets ... 264

1. Types of planetary conjunctions. 2. Conjunction: Principle of computation. 3. Computation of conjunction.

##### 20. Conjunction of Stars and Planets ... 271

1. Conjunction of stars and planets. 2. Principle of planet-star conjunction. 3. Occultation of stars by planets. 4. Occultation of Rohiṇī by planets. 5. Occultation of stars by the Moon. 6. Time of star-planet conjunction.

#### V. INNOVATIVE TRENDS

##### 21. Novel Innovations ... 274

1. True longitude computation on the sphere of the zodiac. 2. Computation of True Moon. 3. Simplified astronomical procedures.

#### IV. OCCULTATION

##### 16. Eclipses ... 196

1. Cause stated in the Ṛgveda. 2. Cause of the lunar eclipse. 3. Lunar eclipse: Principle of computation. 4. Lunar eclipse computation: Vāsiṣṭha and Pauliṣa. 5. —Saurasiddhānta. 6. —Āryabhaṭīya. 7. —Āryabhaṭa's Midnight system. 8. —Emendation by Brahmagupta. 9. —Bhāskara I. 10. —Lalla. 11. —Bhāskara II. 12. —Karaṇaratna. 13. —Śrīpati. 14. —Vākyakaraṇa. 15. —Grahalāghava. 16. Lunar eclipse diagram: Vāsiṣṭha Pauliṣa. 17. —Āryabhaṭa's Midnight system. 18. —Bhāskara I. 19. —Lalla. 20. —Sūryasiddhānta. 21. —Bhāskara II. 22. —Karaṇaratna. 23. Solar eclipse: Computation: Pauliṣa. 24. —Romakasiddhānta. 25. —Saurasiddhānta. 26. —Āryabhaṭa's Midnight system. 27. —Bhāskara I. 28. —Lalla. 29. —Mahāsiddhānta. 30. —Bhāskara II. 31. —Karaṇaratna. 32. —Śrīpati. 33. —Grahalāghava. 34. —Solar eclipse diagram: Romakasiddhānta. 35. —Saurasiddhānta. 36. Colour of eclipses. 37. Conditions for non-prediction of eclipses. 38. —Inscriptional references: Lunar eclipses. 38. Solar eclipses.

##### 17. Phases of the Moon ... 241

1. Periodical appearance of the Moon. 2. Moon's luminosity. 3. Conditions of Moon's visibility. 4. Preliminaries for computation. 5. Visibility corrections: Ākṣa, Āyana and the Third. 6. Rising and setting of the Moon. 7. Moon's shadow. 8. Computation of Moon's cusps. 9. Moon's cusps—diagram.

##### 18. Heliacal rising and setting of Planets and Stars ... 254

1. Heliacal rising and setting of planets. 2. Days of rising and setting. 3. Planetary elongation for rising and setting. 4. Visibility corrections. 5. Computation of rising and setting. 6. Jupiter's rising and setting. 7. Venus: Rising and setting. 8. Rising and setting of a star. 9. Canopus: Rising.

##### 19. Conjunction of Planets ... 264

1. Types of planetary conjunctions. 2. Conjunction: Principle of computation. 3. Computation of conjunction.

##### 20. Conjunction of Stars and Planets ... 271

1. Conjunction of stars and planets. 2. Principle of planet-star conjunction. 3. Occultation of stars by planets. 4. Occultation of Rohiṇī by planets. 5. Occultation of stars by the Moon. 6. Time of star-planet conjunction.

#### V. INNOVATIVE TRENDS

##### 21. Novel Innovations ... 274

1. True longitude computation on the sphere of the zodiac. 2. Computation of True Moon. 3. Simplified astronomical procedures.

#### IV. OCCULTATION

##### 16. Eclipses ... 196

1. Cause stated in the Ṛgveda. 2. Cause of the lunar eclipse. 3. Lunar eclipse: Principle of computation. 4. Lunar eclipse computation: Vāsiṣṭha and Pauliṣa. 5. —Saurasiddhānta. 6. —Āryabhaṭīya. 7. —Āryabhaṭa's Midnight system. 8. —Emendation by Brahmagupta. 9. —Bhāskara I. 10. —Lalla. 11. —Bhāskara II. 12. —Karaṇaratna. 13. —Śrīpati. 14. —Vākyakaraṇa. 15. —Grahalāghava. 16. Lunar eclipse diagram: Vāsiṣṭha Pauliṣa. 17. —Āryabhaṭa's Midnight system. 18. —Bhāskara I. 19. —Lalla. 20. —Sūryasiddhānta. 21. —Bhāskara II. 22. —Karaṇaratna. 23. Solar eclipse: Computation: Pauliṣa. 24. —Romakasiddhānta. 25. —Saurasiddhānta. 26. —Āryabhaṭa's Midnight system. 27. —Bhāskara I. 28. —Lalla. 29. —Mahāsiddhānta. 30. —Bhāskara II. 31. —Karaṇaratna. 32. —Śrīpati. 33. —Grahalāghava. 34. —Solar eclipse diagram: Romakasiddhānta. 35. —Saurasiddhānta. 36. Colour of eclipses. 37. Conditions for non-prediction of eclipses. 38. —Inscriptional references: Lunar eclipses. 38. Solar eclipses.

##### 17. Phases of the Moon ... 241

1. Periodical appearance of the Moon. 2. Moon's luminosity. 3. Conditions of Moon's visibility. 4. Preliminaries for computation. 5. Visibility corrections: Ākṣa, Āyana and the Third. 6. Rising and setting of the Moon. 7. Moon's shadow. 8. Computation of Moon's cusps. 9. Moon's cusps—diagram.

##### 18. Heliacal rising and setting of Planets and Stars ... 254

1. Heliacal rising and setting of planets. 2. Days of rising and setting. 3. Planetary elongation for rising and setting. 4. Visibility corrections. 5. Computation of rising and setting. 6. Jupiter's rising and setting. 7. Venus: Rising and setting. 8. Rising and setting of a star. 9. Canopus: Rising.

##### 19. Conjunction of Planets ... 264

1. Types of planetary conjunctions. 2. Conjunction: Principle of computation. 3. Computation of conjunction.

##### 20. Conjunction of Stars and Planets ... 271

1. Conjunction of stars and planets. 2. Principle of planet-star conjunction. 3. Occultation of stars by planets. 4. Occultation of Rohiṇī by planets. 5. Occultation of stars by the Moon. 6. Time of star-planet conjunction.

#### V. INNOVATIVE TRENDS

##### 21. Novel Innovations ... 274

1. True longitude computation on the sphere of the zodiac. 2. Computation of True Moon. 3. Simplified astronomical procedures.



#### IV. OCCULTATION

##### 16. Eclipses ... 196

1. Cause stated in the Ṛgveda. 2. Cause of the lunar eclipse. 3. Lunar eclipse: Principle of computation. 4. Lunar eclipse computation: Vāsiṣṭha and Pauliṣa. 5. —Saurasiddhānta. 6. —Āryabhaṭīya. 7. —Āryabhaṭa's Midnight system. 8. —Emendation by Brahmagupta. 9. —Bhāskara I. 10. —Lalla. 11. —Bhāskara II. 12. —Karaṇaratna. 13. —Śrīpati. 14. —Vākyakaraṇa. 15. —Grahalāghava. 16. Lunar eclipse diagram: Vāsiṣṭha Pauliṣa. 17. —Āryabhaṭa's Midnight system. 18. —Bhāskara I. 19. —Lalla. 20. —Sūryasiddhānta. 21. —Bhāskara II. 22. —Karaṇaratna. 23. Solar eclipse: Computation: Pauliṣa. 24. —Romakasiddhānta. 25. —Saurasiddhānta. 26. —Āryabhaṭa's Midnight system. 27. —Bhāskara I. 28. —Lalla. 29. —Mahāsiddhānta. 30. —Bhāskara II. 31. —Karaṇaratna. 32. —Śrīpati. 33. —Grahalāghava. 34. —Solar eclipse diagram: Romakasiddhānta. 35. —Saurasiddhānta. 36. Colour of eclipses. 37. Conditions for non-prediction of eclipses. 38. —Inscriptional references: Lunar eclipses. 38. Solar eclipses.

##### 17. Phases of the Moon ... 241

1. Periodical appearance of the Moon. 2. Moon's luminosity. 3. Conditions of Moon's visibility. 4. Preliminaries for computation. 5. Visibility corrections: Ākṣa, Āyana and the Third. 6. Rising and setting of the Moon. 7. Moon's shadow. 8. Computation of Moon's cusps. 9. Moon's cusps—diagram.

##### 18. Heliacal rising and setting of Planets and Stars ... 254

1. Heliacal rising and setting of planets. 2. Days of rising and setting. 3. Planetary elongation for rising and setting. 4. Visibility corrections. 5. Computation of rising and setting. 6. Jupiter's rising and setting. 7. Venus: Rising and setting. 8. Rising and setting of a star. 9. Canopus: Rising.

##### 19. Conjunction of Planets ... 264

1. Types of planetary conjunctions. 2. Conjunction: Principle of computation. 3. Computation of conjunction.

##### 20. Conjunction of Stars and Planets ... 271

1. Conjunction of stars and planets. 2. Principle of planet-star conjunction. 3. Occultation of stars by planets. 4. Occultation of Rohiṇī by planets. 5. Occultation of stars by the Moon. 6. Time of star-planet conjunction.

#### V. INNOVATIVE TRENDS

##### 21. Novel Innovations ... 274

1. True longitude computation on the sphere of the zodiac. 2. Computation of True Moon. 3. Simplified astronomical procedures.

#### IV. OCCULTATION

##### 16. Eclipses ... 196

1. Cause stated in the Ṛgveda. 2. Cause of the lunar eclipse. 3. Lunar eclipse: Principle of computation. 4. Lunar eclipse computation: Vāsiṣṭha and Pauliṣa. 5. —Saurasiddhānta. 6. —Āryabhaṭīya. 7. —Āryabhaṭa's Midnight system. 8. —Emendation by Brahmagupta. 9. —Bhāskara I. 10. —Lalla. 11. —Bhāskara II. 12. —Karaṇaratna. 13. —Śrīpati. 14. —Vākyakaraṇa. 15. —Grahalāghava. 16. Lunar eclipse diagram: Vāsiṣṭha Pauliṣa. 17. —Āryabhaṭa's Midnight system. 18. —Bhāskara I. 19. —Lalla. 20. —Sūryasiddhānta. 21. —Bhāskara II. 22. —Karaṇaratna. 23. Solar eclipse: Computation: Pauliṣa. 24. —Romakasiddhānta. 25. —Saurasiddhānta. 26. —Āryabhaṭa's Midnight system. 27. —Bhāskara I. 28. —Lalla. 29. —Mahāsiddhānta. 30. —Bhāskara II. 31. —Karaṇaratna. 32. —Śrīpati. 33. —Grahalāghava. 34. —Solar eclipse diagram: Romakasiddhānta. 35. —Saurasiddhānta. 36. Colour of eclipses. 37. Conditions for non-prediction of eclipses. 38. —Inscriptional references: Lunar eclipses. 38. Solar eclipses.

##### 17. Phases of the Moon ... 241

1. Periodical appearance of the Moon. 2. Moon's luminosity. 3. Conditions of Moon's visibility. 4. Preliminaries for computation. 5. Visibility corrections: Ākṣa, Āyana and the Third. 6. Rising and setting of the Moon. 7. Moon's shadow. 8. Computation of Moon's cusps. 9. Moon's cusps—diagram.

##### 18. Heliacal rising and setting of Planets and Stars ... 254

1. Heliacal rising and setting of planets. 2. Days of rising and setting. 3. Planetary elongation for rising and setting. 4. Visibility corrections. 5. Computation of rising and setting. 6. Jupiter's rising and setting. 7. Venus: Rising and setting. 8. Rising and setting of a star. 9. Canopus: Rising.

##### 19. Conjunction of Planets ... 264

1. Types of planetary conjunctions. 2. Conjunction: Principle of computation. 3. Computation of conjunction.

##### 20. Conjunction of Stars and Planets ... 271

1. Conjunction of stars and planets. 2. Principle of planet-star conjunction. 3. Occultation of stars by planets. 4. Occultation of Rohiṇī by planets. 5. Occultation of stars by the Moon. 6. Time of star-planet conjunction.

#### V. INNOVATIVE TRENDS

##### 21. Novel Innovations ... 274

1. True longitude computation on the sphere of the zodiac. 2. Computation of True Moon. 3. Simplified astronomical procedures.

#### IV. OCCULTATION

##### 16. Eclipses ... 196

1. Cause stated in the Ṛgveda. 2. Cause of the lunar eclipse. 3. Lunar eclipse: Principle of computation. 4. Lunar eclipse computation: Vāsiṣṭha and Pauliṣa. 5. —Saurasiddhānta. 6. —Āryabhaṭīya. 7. —Āryabhaṭa's Midnight system. 8. —Emendation by Brahmagupta. 9. —Bhāskara I. 10. —Lalla. 11. —Bhāskara II. 12. —Karaṇaratna. 13. —Śrīpati. 14. —Vākyakaraṇa. 15. —Grahalāghava. 16. Lunar eclipse diagram: Vāsiṣṭha Pauliṣa. 17. —Āryabhaṭa's Midnight system. 18. —Bhāskara I. 19. —Lalla. 20. —Sūryasiddhānta. 21. —Bhāskara II. 22. —Karaṇaratna. 23. Solar eclipse: Computation: Pauliṣa. 24. —Romakasiddhānta. 25. —Saurasiddhānta. 26. —Āryabhaṭa's Midnight system. 27. —Bhāskara I. 28. —Lalla. 29. —Mahāsiddhānta. 30. —Bhāskara II. 31. —Karaṇaratna. 32. —Śrīpati. 33. —Grahalāghava. 34. —Solar eclipse diagram: Romakasiddhānta. 35. —Saurasiddhānta. 36. Colour of eclipses. 37. Conditions for non-prediction of eclipses. 38. —Inscriptional references: Lunar eclipses. 38. Solar eclipses.

##### 17. Phases of the Moon ... 241

1. Periodical appearance of the Moon. 2. Moon's luminosity. 3. Conditions of Moon's visibility. 4. Preliminaries for computation. 5. Visibility corrections: Ākṣa, Āyana and the Third. 6. Rising and setting of the Moon. 7. Moon's shadow. 8. Computation of Moon's cusps. 9. Moon's cusps—diagram.

##### 18. Heliacal rising and setting of Planets and Stars ... 254

1. Heliacal rising and setting of planets. 2. Days of rising and setting. 3. Planetary elongation for rising and setting. 4. Visibility corrections. 5. Computation of rising and setting. 6. Jupiter's rising and setting. 7. Venus: Rising and setting. 8. Rising and setting of a star. 9. Canopus: Rising.

##### 19. Conjunction of Planets ... 264

1. Types of planetary conjunctions. 2. Conjunction: Principle of computation. 3. Computation of conjunction.

##### 20. Conjunction of Stars and Planets ... 271

1. Conjunction of stars and planets. 2. Principle of planet-star conjunction. 3. Occultation of stars by planets. 4. Occultation of Rohiṇī by planets. 5. Occultation of stars by the Moon. 6. Time of star-planet conjunction.

#### V. INNOVATIVE TRENDS

##### 21. Novel Innovations ... 274

1. True longitude computation on the sphere of the zodiac. 2. Computation of True Moon. 3. Simplified astronomical procedures.

#### IV. OCCULTATION

##### 16. Eclipses ... 196

1. Cause stated in the Ṛgveda. 2. Cause of the lunar eclipse. 3. Lunar eclipse: Principle of computation. 4. Lunar eclipse computation: Vāsiṣṭha and Pauliṣa. 5. —Saurasiddhānta. 6. —Āryabhaṭīya. 7. —Āryabhaṭa's Midnight system. 8. —Emendation by Brahmagupta. 9. —Bhāskara I. 10. —Lalla. 11. —Bhāskara II. 12. —Karaṇaratna. 13. —Śrīpati. 14. —Vākyakaraṇa. 15. —Grahalāghava. 16. Lunar eclipse diagram: Vāsiṣṭha Pauliṣa. 17. —Āryabhaṭa's Midnight system. 18. —Bhāskara I. 19. —Lalla. 20. —Sūryasiddhānta. 21. —Bhāskara II. 22. —Karaṇaratna. 23. Solar eclipse: Computation: Pauliṣa. 24. —Romakasiddhānta. 25. —Saurasiddhānta. 26. —Āryabhaṭa's Midnight system. 27. —Bhāskara I. 28. —Lalla. 29. —Mahāsiddhānta. 30. —Bhāskara II. 31. —Karaṇaratna. 32. —Śrīpati. 33. —Grahalāghava. 34. —Solar eclipse diagram: Romakasiddhānta. 35. —Saurasiddhānta. 36. Colour of eclipses. 37. Conditions for non-prediction of eclipses. 38. —Inscriptional references: Lunar eclipses. 38. Solar eclipses.

##### 17. Phases of the Moon ... 241

1. Periodical appearance of the Moon. 2. Moon's luminosity. 3. Conditions of Moon's visibility. 4. Preliminaries for computation. 5. Visibility corrections: Ākṣa, Āyana and the Third. 6. Rising and setting of the Moon. 7. Moon's shadow. 8. Computation of Moon's cusps. 9. Moon's cusps—diagram.

##### 18. Heliacal rising and setting of Planets and Stars ... 254

1. Heliacal rising and setting of planets. 2. Days of rising and setting. 3. Planetary elongation for rising and setting. 4. Visibility corrections. 5. Computation of rising and setting. 6. Jupiter's rising and setting. 7. Venus: Rising and setting. 8. Rising and setting of a star. 9. Canopus: Rising.

##### 19. Conjunction of Planets ... 264

1. Types of planetary conjunctions. 2. Conjunction: Principle of computation. 3. Computation of conjunction.

##### 20. Conjunction of Stars and Planets ... 271

1. Conjunction of stars and planets. 2. Principle of planet-star conjunction. 3. Occultation of stars by planets. 4. Occultation of Rohiṇī by planets. 5. Occultation of stars by the Moon. 6. Time of star-planet conjunction.

#### V. INNOVATIVE TRENDS

##### 21. Novel Innovations ... 274

1. True longitude computation on the sphere of the zodiac. 2. Computation of True Moon. 3. Simplified astronomical procedures.

#### IV. OCCULTATION

##### 16. Eclipses ... 196

1. Cause stated in the Ṛgveda. 2. Cause of the lunar eclipse. 3. Lunar eclipse: Principle of computation. 4. Lunar eclipse computation: Vāsiṣṭha and Pauliṣa. 5. —Saurasiddhānta. 6. —Āryabhaṭīya. 7. —Āryabhaṭa's Midnight system. 8. —Emendation by Brahmagupta. 9. —Bhāskara I. 10. —Lalla. 11. —Bhāskara II. 12. —Karaṇaratna. 13. —Śrīpati. 14. —Vākyakaraṇa. 15. —Grahalāghava. 16. Lunar eclipse diagram: Vāsiṣṭha Pauliṣa. 17. —Āryabhaṭa's Midnight system. 18. —Bhāskara I. 19. —Lalla. 20. —Sūryasiddhānta. 21. —Bhāskara II. 22. —Karaṇaratna. 23. Solar eclipse: Computation: Pauliṣa. 24. —Romakasiddhānta. 25. —Saurasiddhānta. 26. —Āryabhaṭa's Midnight system. 27. —Bhāskara I. 28. —Lalla. 29. —Mahāsiddhānta. 30. —Bhāskara II. 31. —Karaṇaratna. 32. —Śrīpati. 33. —Grahalāghava. 34. —Solar eclipse diagram: Romakasiddhānta. 35. —Saurasiddhānta. 36. Colour of eclipses. 37. Conditions for non-prediction of eclipses. 38. —Inscriptional references: Lunar eclipses. 38. Solar eclipses.

##### 17. Phases of the Moon ... 241

1. Periodical appearance of the Moon. 2. Moon's luminosity. 3. Conditions of Moon's visibility. 4. Preliminaries for computation. 5. Visibility corrections: Ākṣa, Āyana and the Third. 6. Rising and setting of the Moon. 7. Moon's shadow. 8. Computation of Moon's cusps. 9. Moon's cusps—diagram.

##### 18. Heliacal rising and setting of Planets and Stars ... 254

1. Heliacal rising and setting of planets. 2. Days of rising and setting. 3. Planetary elongation for rising and setting. 4. Visibility corrections. 5. Computation of rising and setting. 6. Jupiter's rising and setting. 7. Venus: Rising and setting. 8. Rising and setting of a star. 9. Canopus: Rising.

##### 19. Conjunction of Planets ... 264

1. Types of planetary conjunctions. 2. Conjunction: Principle of computation. 3. Computation of conjunction.

##### 20. Conjunction of Stars and Planets ... 271

1. Conjunction of stars and planets. 2. Principle of planet-star conjunction. 3. Occultation of stars by planets. 4. Occultation of Rohiṇī by planets. 5. Occultation of stars by the Moon. 6. Time of star-planet conjunction.

#### V. INNOVATIVE TRENDS

##### 21. Novel Innovations ... 274

1. True longitude computation on the sphere of the zodiac. 2. Computation of True Moon. 3. Simplified astronomical procedures.

#### IV. OCCULTATION

##### 16. Eclipses ... 196

1. Cause stated in the Ṛgveda. 2. Cause of the lunar eclipse. 3. Lunar eclipse: Principle of computation. 4. Lunar eclipse computation: Vāsiṣṭha and Pauliṣa. 5. —Saurasiddhānta. 6. —Āryabhaṭīya. 7. —Āryabhaṭa's Midnight system. 8. —Emendation by Brahmagupta. 9. —Bhāskara I. 10. —Lalla. 11. —Bhāskara II. 12. —Karaṇaratna. 13. —Śrīpati. 14. —Vākyakaraṇa. 15. —Grahalāghava. 16. Lunar eclipse diagram: Vāsiṣṭha Pauliṣa. 17. —Āryabhaṭa's Midnight system. 18. —Bhāskara I. 19. —Lalla. 20. —Sūryasiddhānta. 21. —Bhāskara II. 22. —Karaṇaratna. 23. Solar eclipse: Computation: Pauliṣa. 24. —Romakasiddhānta. 25. —Saurasiddhānta. 26. —Āryabhaṭa's Midnight system. 27. —Bhāskara I. 28. —Lalla. 29. —Mahāsiddhānta. 30. —Bhāskara II. 31. —Karaṇaratna. 32. —Śrīpati. 33. —Grahalāghava. 34. —Solar eclipse diagram: Romakasiddhānta. 35. —Saurasiddhānta. 36. Colour of eclipses. 37. Conditions for non-prediction of eclipses. 38. —Inscriptional references: Lunar eclipses. 38. Solar eclipses.

##### 17. Phases of the Moon ... 241

1. Periodical appearance of the Moon. 2. Moon's luminosity. 3. Conditions of Moon's visibility. 4. Preliminaries for computation. 5. Visibility corrections: Ākṣa, Āyana and the Third. 6. Rising and setting of the Moon. 7. Moon's shadow. 8. Computation of Moon's cusps. 9. Moon's cusps—diagram.

##### 18. Heliacal rising and setting of Planets and Stars ... 254

1. Heliacal rising and setting of planets. 2. Days of rising and setting. 3. Planetary elongation for rising and setting. 4. Visibility corrections. 5. Computation of rising and setting. 6. Jupiter's rising and setting. 7. Venus: Rising and setting. 8. Rising and setting of a star. 9. Canopus: Rising.

##### 19. Conjunction of Planets ... 264

1. Types of planetary conjunctions. 2. Conjunction: Principle of computation. 3. Computation of conjunction.

##### 20. Conjunction of Stars and Planets ... 271

1. Conjunction of stars and planets. 2. Principle of planet-star conjunction. 3. Occultation of stars by planets. 4. Occultation of Rohiṇī by planets. 5. Occultation of stars by the Moon. 6. Time of star-planet conjunction.

#### V. INNOVATIVE TRENDS

##### 21. Novel Innovations ... 274

1. True longitude computation on the sphere of the zodiac. 2. Computation of True Moon. 3. Simplified astronomical procedures.

#### IV. OCCULTATION

##### 16. Eclipses ... 196

1. Cause stated in the Ṛgveda. 2. Cause of the lunar eclipse. 3. Lunar eclipse: Principle of computation. 4. Lunar eclipse computation: Vāsiṣṭha and Pauliṣa. 5. —Saurasiddhānta. 6. —Āryabhaṭīya. 7. —Āryabhaṭa's Midnight system. 8. —Emendation by Brahmagupta. 9. —Bhāskara I. 10. —Lalla. 11. —Bhāskara II. 12. —Karaṇaratna. 13. —Śrīpati. 14. —Vākyakaraṇa. 15. —Grahalāghava. 16. Lunar eclipse diagram: Vāsiṣṭha Pauliṣa. 17. —Āryabhaṭa's Midnight system. 18. —Bhāskara I. 19. —Lalla. 20. —Sūryasiddhānta. 21. —Bhāskara II. 22. —Karaṇaratna. 23. Solar eclipse: Computation: Pauliṣa. 24. —Romakasiddhānta. 25. —Saurasiddhānta. 26. —Āryabhaṭa's Midnight system. 27. —Bhāskara I. 28. —Lalla. 29. —Mahāsiddhānta. 30. —Bhāskara II. 31. —Karaṇaratna. 32. —Śrīpati. 33. —Grahalāghava. 34. —Solar eclipse diagram: Romakasiddhānta. 35. —Saurasiddhānta. 36. Colour of eclipses. 37. Conditions for non-prediction of eclipses. 38. —Inscriptional references: Lunar eclipses. 38. Solar eclipses.

##### 17. Phases of the Moon ... 241

1. Periodical appearance of the Moon. 2. Moon's luminosity. 3. Conditions of Moon's visibility. 4. Preliminaries for computation. 5. Visibility corrections: Ākṣa, Āyana and the Third. 6. Rising and setting of the Moon. 7. Moon's shadow. 8. Computation of Moon's cusps. 9. Moon's cusps—diagram.

##### 18. Heliacal rising and setting of Planets and Stars ... 254

1. Heliacal rising and setting of planets. 2. Days of rising and setting. 3. Planetary elongation for rising and setting. 4. Visibility corrections. 5. Computation of rising and setting. 6. Jupiter's rising and setting. 7. Venus: Rising and setting. 8. Rising and setting of a star. 9. Canopus: Rising.

##### 19. Conjunction of Planets ... 264

1. Types of planetary conjunctions. 2. Conjunction: Principle of computation. 3. Computation of conjunction.

##### 20. Conjunction of Stars and Planets ... 271

1. Conjunction of stars and planets. 2. Principle of planet-star conjunction. 3. Occultation of stars by planets. 4. Occultation of Rohiṇī by planets. 5. Occultation of stars by the Moon. 6. Time of star-planet conjunction.

#### V. INNOVATIVE TRENDS

##### 21. Novel Innovations ... 274

1. True longitude computation on the sphere of the zodiac. 2. Computation of True Moon. 3. Simplified astronomical procedures.

#### IV. OCCULTATION

##### 16. Eclipses ... 196

1. Cause stated in the Ṛgveda. 2. Cause of the lunar eclipse. 3. Lunar eclipse: Principle of computation. 4. Lunar eclipse computation: Vāsiṣṭha and Pauliṣa. 5. —Saurasiddhānta. 6. —Āryabhaṭīya. 7. —Āryabhaṭa's Midnight system. 8. —Emendation by Brahmagupta. 9. —Bhāskara I. 10. —Lalla. 11. —Bhāskara II. 12. —Karaṇaratna. 13. —Śrīpati. 14. —Vākyakaraṇa. 15. —Grahalāghava. 16. Lunar eclipse diagram: Vāsiṣṭha Pauliṣa. 17. —Āryabhaṭa's Midnight system. 18. —Bhāskara I. 19. —Lalla. 20. —Sūryasiddhānta. 21. —Bhāskara II. 22. —Karaṇaratna. 23. Solar eclipse: Computation: Pauliṣa. 24. —Romakasiddhānta. 25. —Saurasiddhānta. 26. —Āryabhaṭa's Midnight system. 27. —Bhāskara I. 28. —Lalla. 29. —Mahāsiddhānta. 30. —Bhāskara II. 31. —Karaṇaratna. 32. —Śrīpati. 33. —Grahalāghava. 34. —Solar eclipse diagram: Romakasiddhānta. 35. —Saurasiddhānta. 36. Colour of eclipses. 37. Conditions for non-prediction of eclipses. 38. —Inscriptional references: Lunar eclipses. 38. Solar eclipses.

##### 17. Phases of the Moon ... 241

1. Periodical appearance of the Moon. 2. Moon's luminosity. 3. Conditions of Moon's visibility. 4. Preliminaries for computation. 5. Visibility corrections: Ākṣa, Āyana and the Third. 6. Rising and setting of the Moon. 7. Moon's shadow. 8. Computation of Moon's cusps. 9. Moon's cusps—diagram.

##### 18. Heliacal rising and setting of Planets and Stars ... 254

1. Heliacal rising and setting of planets. 2. Days of rising and setting. 3. Planetary elongation for rising and setting. 4. Visibility corrections. 5. Computation of rising and setting. 6. Jupiter's rising and setting. 7. Venus: Rising and setting. 8. Rising and setting of a star. 9. Canopus: Rising.

##### 19. Conjunction of Planets ... 264

1. Types of planetary conjunctions. 2. Conjunction: Principle of computation. 3. Computation of conjunction.

##### 20. Conjunction of Stars and Planets ... 271

1. Conjunction of stars and planets. 2. Principle of planet-star conjunction. 3. Occultation of stars by planets. 4. Occultation of Rohiṇī by planets. 5. Occultation of stars by the Moon. 6. Time of star-planet conjunction.

#### V. INNOVATIVE TRENDS

##### 21. Novel Innovations ... 274

1. True longitude computation on the sphere of the zodiac. 2. Computation of True Moon. 3. Simplified astronomical procedures.



#### IV. OCCULTATION

##### 16. Eclipses ... 196

1. Cause stated in the Ṛgveda. 2. Cause of the lunar eclipse. 3. Lunar eclipse: Principle of computation. 4. Lunar eclipse computation: Vāsiṣṭha and Pauliṣa. 5. —Saurasiddhānta. 6. —Āryabhaṭīya. 7. —Āryabhaṭa's Midnight system. 8. —Emendation by Brahmagupta. 9. —Bhāskara I. 10. —Lalla. 11. —Bhāskara II. 12. —Karaṇaratna. 13. —Śrīpati. 14. —Vākyakaraṇa. 15. —Grahalāghava. 16. Lunar eclipse diagram: Vāsiṣṭha Pauliṣa. 17. —Āryabhaṭa's Midnight system. 18. —Bhāskara I. 19. —Lalla. 20. —Sūryasiddhānta. 21. —Bhāskara II. 22. —Karaṇaratna. 23. Solar eclipse: Computation: Pauliṣa. 24. —Romakasiddhānta. 25. —Saurasiddhānta. 26. —Āryabhaṭa's Midnight system. 27. —Bhāskara I. 28. —Lalla. 29. —Mahāsiddhānta. 30. —Bhāskara II. 31. —Karaṇaratna. 32. —Śrīpati. 33. —Grahalāghava. 34. —Solar eclipse diagram: Romakasiddhānta. 35. —Saurasiddhānta. 36. Colour of eclipses. 37. Conditions for non-prediction of eclipses. 38. —Inscriptional references: Lunar eclipses. 38. Solar eclipses.

##### 17. Phases of the Moon ... 241

1. Periodical appearance of the Moon. 2. Moon's luminosity. 3. Conditions of Moon's visibility. 4. Preliminaries for computation. 5. Visibility corrections: Ākṣa, Āyana and the Third. 6. Rising and setting of the Moon. 7. Moon's shadow. 8. Computation of Moon's cusps. 9. Moon's cusps—diagram.

##### 18. Heliacal rising and setting of Planets and Stars ... 254

1. Heliacal rising and setting of planets. 2. Days of rising and setting. 3. Planetary elongation for rising and setting. 4. Visibility corrections. 5. Computation of rising and setting. 6. Jupiter's rising and setting. 7. Venus: Rising and setting. 8. Rising and setting of a star. 9. Canopus: Rising.

##### 19. Conjunction of Planets ... 264

1. Types of planetary conjunctions. 2. Conjunction: Principle of computation. 3. Computation of conjunction.

##### 20. Conjunction of Stars and Planets ... 271

1. Conjunction of stars and planets. 2. Principle of planet-star conjunction. 3. Occultation of stars by planets. 4. Occultation of Rohiṇī by planets. 5. Occultation of stars by the Moon. 6. Time of star-planet conjunction.

#### V. INNOVATIVE TRENDS

##### 21. Novel Innovations ... 274

1. True longitude computation on the sphere of the zodiac. 2. Computation of True Moon. 3. Simplified astronomical procedures.

#### IV. OCCULTATION

##### 16. Eclipses ... 196

1. Cause stated in the Ṛgveda. 2. Cause of the lunar eclipse. 3. Lunar eclipse: Principle of computation. 4. Lunar eclipse computation: Vāsiṣṭha and Pauliṣa. 5. —Saurasiddhānta. 6. —Āryabhaṭīya. 7. —Āryabhaṭa's Midnight system. 8. —Emendation by Brahmagupta. 9. —Bhāskara I. 10. —Lalla. 11. —Bhāskara II. 12. —Karaṇaratna. 13. —Śrīpati. 14. —Vākyakaraṇa. 15. —Grahalāghava. 16. Lunar eclipse diagram: Vāsiṣṭha Pauliṣa. 17. —Āryabhaṭa's Midnight system. 18. —Bhāskara I. 19. —Lalla. 20. —Sūryasiddhānta. 21. —Bhāskara II. 22. —Karaṇaratna. 23. Solar eclipse: Computation: Pauliṣa. 24. —Romakasiddhānta. 25. —Saurasiddhānta. 26. —Āryabhaṭa's Midnight system. 27. —Bhāskara I. 28. —Lalla. 29. —Mahāsiddhānta. 30. —Bhāskara II. 31. —Karaṇaratna. 32. —Śrīpati. 33. —Grahalāghava. 34. —Solar eclipse diagram: Romakasiddhānta. 35. —Saurasiddhānta. 36. Colour of eclipses. 37. Conditions for non-prediction of eclipses. 38. —Inscriptional references: Lunar eclipses. 38. Solar eclipses.

##### 17. Phases of the Moon ... 241

1. Periodical appearance of the Moon. 2. Moon's luminosity. 3. Conditions of Moon's visibility. 4. Preliminaries for computation. 5. Visibility corrections: Ākṣa, Āyana and the Third. 6. Rising and setting of the Moon. 7. Moon's shadow. 8. Computation of Moon's cusps. 9. Moon's cusps—diagram.

##### 18. Heliacal rising and setting of Planets and Stars ... 254

1. Heliacal rising and setting of planets. 2. Days of rising and setting. 3. Planetary elongation for rising and setting. 4. Visibility corrections. 5. Computation of rising and setting. 6. Jupiter's rising and setting. 7. Venus: Rising and setting. 8. Rising and setting of a star. 9. Canopus: Rising.

##### 19. Conjunction of Planets ... 264

1. Types of planetary conjunctions. 2. Conjunction: Principle of computation. 3. Computation of conjunction.

##### 20. Conjunction of Stars and Planets ... 271

1. Conjunction of stars and planets. 2. Principle of planet-star conjunction. 3. Occultation of stars by planets. 4. Occultation of Rohiṇī by planets. 5. Occultation of stars by the Moon. 6. Time of star-planet conjunction.

#### V. INNOVATIVE TRENDS

##### 21. Novel Innovations ... 274

1. True longitude computation on the sphere of the zodiac. 2. Computation of True Moon. 3. Simplified astronomical procedures.

#### IV. OCCULTATION

##### 16. Eclipses ... 196

1. Cause stated in the Ṛgveda. 2. Cause of the lunar eclipse. 3. Lunar eclipse: Principle of computation. 4. Lunar eclipse computation: Vāsiṣṭha and Pauliṣa. 5. —Saurasiddhānta. 6. —Āryabhaṭīya. 7. —Āryabhaṭa's Midnight system. 8. —Emendation by Brahmagupta. 9. —Bhāskara I. 10. —Lalla. 11. —Bhāskara II. 12. —Karaṇaratna. 13. —Śrīpati. 14. —Vākyakaraṇa. 15. —Grahalāghava. 16. Lunar eclipse diagram: Vāsiṣṭha Pauliṣa. 17. —Āryabhaṭa's Midnight system. 18. —Bhāskara I. 19. —Lalla. 20. —Sūryasiddhānta. 21. —Bhāskara II. 22. —Karaṇaratna. 23. Solar eclipse: Computation: Pauliṣa. 24. —Romakasiddhānta. 25. —Saurasiddhānta. 26. —Āryabhaṭa's Midnight system. 27. —Bhāskara I. 28. —Lalla. 29. —Mahāsiddhānta. 30. —Bhāskara II. 31. —Karaṇaratna. 32. —Śrīpati. 33. —Grahalāghava. 34. —Solar eclipse diagram: Romakasiddhānta. 35. —Saurasiddhānta. 36. Colour of eclipses. 37. Conditions for non-prediction of eclipses. 38. —Inscriptional references: Lunar eclipses. 38. Solar eclipses.

##### 17. Phases of the Moon ... 241

1. Periodical appearance of the Moon. 2. Moon's luminosity. 3. Conditions of Moon's visibility. 4. Preliminaries for computation. 5. Visibility corrections: Ākṣa, Āyana and the Third. 6. Rising and setting of the Moon. 7. Moon's shadow. 8. Computation of Moon's cusps. 9. Moon's cusps—diagram.

##### 18. Heliacal rising and setting of Planets and Stars ... 254

1. Heliacal rising and setting of planets. 2. Days of rising and setting. 3. Planetary elongation for rising and setting. 4. Visibility corrections. 5. Computation of rising and setting. 6. Jupiter's rising and setting. 7. Venus: Rising and setting. 8. Rising and setting of a star. 9. Canopus: Rising.

##### 19. Conjunction of Planets ... 264

1. Types of planetary conjunctions. 2. Conjunction: Principle of computation. 3. Computation of conjunction.

##### 20. Conjunction of Stars and Planets ... 271

1. Conjunction of stars and planets. 2. Principle of planet-star conjunction. 3. Occultation of stars by planets. 4. Occultation of Rohiṇī by planets. 5. Occultation of stars by the Moon. 6. Time of star-planet conjunction.

#### V. INNOVATIVE TRENDS

##### 21. Novel Innovations ... 274

1. True longitude computation on the sphere of the zodiac. 2. Computation of True Moon. 3. Simplified astronomical procedures.

#### IV. OCCULTATION

##### 16. Eclipses ... 196

1. Cause stated in the Ṛgveda. 2. Cause of the lunar eclipse. 3. Lunar eclipse: Principle of computation. 4. Lunar eclipse computation: Vāsiṣṭha and Pauliṣa. 5. —Saurasiddhānta. 6. —Āryabhaṭīya. 7. —Āryabhaṭa's Midnight system. 8. —Emendation by Brahmagupta. 9. —Bhāskara I. 10. —Lalla. 11. —Bhāskara II. 12. —Karaṇaratna. 13. —Śrīpati. 14. —Vākyakaraṇa. 15. —Grahalāghava. 16. Lunar eclipse diagram: Vāsiṣṭha Pauliṣa. 17. —Āryabhaṭa's Midnight system. 18. —Bhāskara I. 19. —Lalla. 20. —Sūryasiddhānta. 21. —Bhāskara II. 22. —Karaṇaratna. 23. Solar eclipse: Computation: Pauliṣa. 24. —Romakasiddhānta. 25. —Saurasiddhānta. 26. —Āryabhaṭa's Midnight system. 27. —Bhāskara I. 28. —Lalla. 29. —Mahāsiddhānta. 30. —Bhāskara II. 31. —Karaṇaratna. 32. —Śrīpati. 33. —Grahalāghava. 34. —Solar eclipse diagram: Romakasiddhānta. 35. —Saurasiddhānta. 36. Colour of eclipses. 37. Conditions for non-prediction of eclipses. 38. —Inscriptional references: Lunar eclipses. 38. Solar eclipses.

##### 17. Phases of the Moon ... 241

1. Periodical appearance of the Moon. 2. Moon's luminosity. 3. Conditions of Moon's visibility. 4. Preliminaries for computation. 5. Visibility corrections: Ākṣa, Āyana and the Third. 6. Rising and setting of the Moon. 7. Moon's shadow. 8. Computation of Moon's cusps. 9. Moon's cusps—diagram.

##### 18. Heliacal rising and setting of Planets and Stars ... 254

1. Heliacal rising and setting of planets. 2. Days of rising and setting. 3. Planetary elongation for rising and setting. 4. Visibility corrections. 5. Computation of rising and setting. 6. Jupiter's rising and setting. 7. Venus: Rising and setting. 8. Rising and setting of a star. 9. Canopus: Rising.

##### 19. Conjunction of Planets ... 264

1. Types of planetary conjunctions. 2. Conjunction: Principle of computation. 3. Computation of conjunction.

##### 20. Conjunction of Stars and Planets ... 271

1. Conjunction of stars and planets. 2. Principle of planet-star conjunction. 3. Occultation of stars by planets. 4. Occultation of Rohiṇī by planets. 5. Occultation of stars by the Moon. 6. Time of star-planet conjunction.

#### V. INNOVATIVE TRENDS

##### 21. Novel Innovations ... 274

1. True longitude computation on the sphere of the zodiac. 2. Computation of True Moon. 3. Simplified astronomical procedures.

#### IV. OCCULTATION

##### 16. Eclipses ... 196

1. Cause stated in the Ṛgveda. 2. Cause of the lunar eclipse. 3. Lunar eclipse: Principle of computation. 4. Lunar eclipse computation: Vāsiṣṭha and Pauliṣa. 5. —Saurasiddhānta. 6. —Āryabhaṭīya. 7. —Āryabhaṭa's Midnight system. 8. —Emendation by Brahmagupta. 9. —Bhāskara I. 10. —Lalla. 11. —Bhāskara II. 12. —Karaṇaratna. 13. —Śrīpati. 14. —Vākyakaraṇa. 15. —Grahalāghava. 16. Lunar eclipse diagram: Vāsiṣṭha Pauliṣa. 17. —Āryabhaṭa's Midnight system. 18. —Bhāskara I. 19. —Lalla. 20. —Sūryasiddhānta. 21. —Bhāskara II. 22. —Karaṇaratna. 23. Solar eclipse: Computation: Pauliṣa. 24. —Romakasiddhānta. 25. —Saurasiddhānta. 26. —Āryabhaṭa's Midnight system. 27. —Bhāskara I. 28. —Lalla. 29. —Mahāsiddhānta. 30. —Bhāskara II. 31. —Karaṇaratna. 32. —Śrīpati. 33. —Grahalāghava. 34. —Solar eclipse diagram: Romakasiddhānta. 35. —Saurasiddhānta. 36. Colour of eclipses. 37. Conditions for non-prediction of eclipses. 38. —Inscriptional references: Lunar eclipses. 38. Solar eclipses.

##### 17. Phases of the Moon ... 241

1. Periodical appearance of the Moon. 2. Moon's luminosity. 3. Conditions of Moon's visibility. 4. Preliminaries for computation. 5. Visibility corrections: Ākṣa, Āyana and the Third. 6. Rising and setting of the Moon. 7. Moon's shadow. 8. Computation of Moon's cusps. 9. Moon's cusps—diagram.

##### 18. Heliacal rising and setting of Planets and Stars ... 254

1. Heliacal rising and setting of planets. 2. Days of rising and setting. 3. Planetary elongation for rising and setting. 4. Visibility corrections. 5. Computation of rising and setting. 6. Jupiter's rising and setting. 7. Venus: Rising and setting. 8. Rising and setting of a star. 9. Canopus: Rising.

##### 19. Conjunction of Planets ... 264

1. Types of planetary conjunctions. 2. Conjunction: Principle of computation. 3. Computation of conjunction.

##### 20. Conjunction of Stars and Planets ... 271

1. Conjunction of stars and planets. 2. Principle of planet-star conjunction. 3. Occultation of stars by planets. 4. Occultation of Rohiṇī by planets. 5. Occultation of stars by the Moon. 6. Time of star-planet conjunction.

#### V. INNOVATIVE TRENDS

##### 21. Novel Innovations ... 274

1. True longitude computation on the sphere of the zodiac. 2. Computation of True Moon. 3. Simplified astronomical procedures.

#### IV. OCCULTATION

##### 16. Eclipses ... 196

1. Cause stated in the Ṛgveda. 2. Cause of the lunar eclipse. 3. Lunar eclipse: Principle of computation. 4. Lunar eclipse computation: Vāsiṣṭha and Pauliṣa. 5. —Saurasiddhānta. 6. —Āryabhaṭīya. 7. —Āryabhaṭa's Midnight system. 8. —Emendation by Brahmagupta. 9. —Bhāskara I. 10. —Lalla. 11. —Bhāskara II. 12. —Karaṇaratna. 13. —Śrīpati. 14. —Vākyakaraṇa. 15. —Grahalāghava. 16. Lunar eclipse diagram: Vāsiṣṭha Pauliṣa. 17. —Āryabhaṭa's Midnight system. 18. —Bhāskara I. 19. —Lalla. 20. —Sūryasiddhānta. 21. —Bhāskara II. 22. —Karaṇaratna. 23. Solar eclipse: Computation: Pauliṣa. 24. —Romakasiddhānta. 25. —Saurasiddhānta. 26. —Āryabhaṭa's Midnight system. 27. —Bhāskara I. 28. —Lalla. 29. —Mahāsiddhānta. 30. —Bhāskara II. 31. —Karaṇaratna. 32. —Śrīpati. 33. —Grahalāghava. 34. —Solar eclipse diagram: Romakasiddhānta. 35. —Saurasiddhānta. 36. Colour of eclipses. 37. Conditions for non-prediction of eclipses. 38. —Inscriptional references: Lunar eclipses. 38. Solar eclipses.

##### 17. Phases of the Moon ... 241

1. Periodical appearance of the Moon. 2. Moon's luminosity. 3. Conditions of Moon's visibility. 4. Preliminaries for computation. 5. Visibility corrections: Ākṣa, Āyana and the Third. 6. Rising and setting of the Moon. 7. Moon's shadow. 8. Computation of Moon's cusps. 9. Moon's cusps—diagram.

##### 18. Heliacal rising and setting of Planets and Stars ... 254

1. Heliacal rising and setting of planets. 2. Days of rising and setting. 3. Planetary elongation for rising and setting. 4. Visibility corrections. 5. Computation of rising and setting. 6. Jupiter's rising and setting. 7. Venus: Rising and setting. 8. Rising and setting of a star. 9. Canopus: Rising.

##### 19. Conjunction of Planets ... 264

1. Types of planetary conjunctions. 2. Conjunction: Principle of computation. 3. Computation of conjunction.

##### 20. Conjunction of Stars and Planets ... 271

1. Conjunction of stars and planets. 2. Principle of planet-star conjunction. 3. Occultation of stars by planets. 4. Occultation of Rohiṇī by planets. 5. Occultation of stars by the Moon. 6. Time of star-planet conjunction.

#### V. INNOVATIVE TRENDS

##### 21. Novel Innovations ... 274

1. True longitude computation on the sphere of the zodiac. 2. Computation of True Moon. 3. Simplified astronomical procedures.

#### IV. OCCULTATION

##### 16. Eclipses ... 196

1. Cause stated in the Ṛgveda. 2. Cause of the lunar eclipse. 3. Lunar eclipse: Principle of computation. 4. Lunar eclipse computation: Vāsiṣṭha and Pauliṣa. 5. —Saurasiddhānta. 6. —Āryabhaṭīya. 7. —Āryabhaṭa's Midnight system. 8. —Emendation by Brahmagupta. 9. —Bhāskara I. 10. —Lalla. 11. —Bhāskara II. 12. —Karaṇaratna. 13. —Śrīpati. 14. —Vākyakaraṇa. 15. —Grahalāghava. 16. Lunar eclipse diagram: Vāsiṣṭha Pauliṣa. 17. —Āryabhaṭa's Midnight system. 18. —Bhāskara I. 19. —Lalla. 20. —Sūryasiddhānta. 21. —Bhāskara II. 22. —Karaṇaratna. 23. Solar eclipse: Computation: Pauliṣa. 24. —Romakasiddhānta. 25. —Saurasiddhānta. 26. —Āryabhaṭa's Midnight system. 27. —Bhāskara I. 28. —Lalla. 29. —Mahāsiddhānta. 30. —Bhāskara II. 31. —Karaṇaratna. 32. —Śrīpati. 33. —Grahalāghava. 34. —Solar eclipse diagram: Romakasiddhānta. 35. —Saurasiddhānta. 36. Colour of eclipses. 37. Conditions for non-prediction of eclipses. 38. —Inscriptional references: Lunar eclipses. 38. Solar eclipses.

##### 17. Phases of the Moon ... 241

1. Periodical appearance of the Moon. 2. Moon's luminosity. 3. Conditions of Moon's visibility. 4. Preliminaries for computation. 5. Visibility corrections: Ākṣa, Āyana and the Third. 6. Rising and setting of the Moon. 7. Moon's shadow. 8. Computation of Moon's cusps. 9. Moon's cusps—diagram.

##### 18. Heliacal rising and setting of Planets and Stars ... 254

1. Heliacal rising and setting of planets. 2. Days of rising and setting. 3. Planetary elongation for rising and setting. 4. Visibility corrections. 5. Computation of rising and setting. 6. Jupiter's rising and setting. 7. Venus: Rising and setting. 8. Rising and setting of a star. 9. Canopus: Rising.

##### 19. Conjunction of Planets ... 264

1. Types of planetary conjunctions. 2. Conjunction: Principle of computation. 3. Computation of conjunction.

##### 20. Conjunction of Stars and Planets ... 271

1. Conjunction of stars and planets. 2. Principle of planet-star conjunction. 3. Occultation of stars by planets. 4. Occultation of Rohiṇī by planets. 5. Occultation of stars by the Moon. 6. Time of star-planet conjunction.

#### V. INNOVATIVE TRENDS

##### 21. Novel Innovations ... 274

1. True longitude computation on the sphere of the zodiac. 2. Computation of True Moon. 3. Simplified astronomical procedures.

#### IV. OCCULTATION

##### 16. Eclipses ... 196

1. Cause stated in the Ṛgveda. 2. Cause of the lunar eclipse. 3. Lunar eclipse: Principle of computation. 4. Lunar eclipse computation: Vāsiṣṭha and Pauliṣa. 5. —Saurasiddhānta. 6. —Āryabhaṭīya. 7. —Āryabhaṭa's Midnight system. 8. —Emendation by Brahmagupta. 9. —Bhāskara I. 10. —Lalla. 11. —Bhāskara II. 12. —Karaṇaratna. 13. —Śrīpati. 14. —Vākyakaraṇa. 15. —Grahalāghava. 16. Lunar eclipse diagram: Vāsiṣṭha Pauliṣa. 17. —Āryabhaṭa's Midnight system. 18. —Bhāskara I. 19. —Lalla. 20. —Sūryasiddhānta. 21. —Bhāskara II. 22. —Karaṇaratna. 23. Solar eclipse: Computation: Pauliṣa. 24. —Romakasiddhānta. 25. —Saurasiddhānta. 26. —Āryabhaṭa's Midnight system. 27. —Bhāskara I. 28. —Lalla. 29. —Mahāsiddhānta. 30. —Bhāskara II. 31. —Karaṇaratna. 32. —Śrīpati. 33. —Grahalāghava. 34. —Solar eclipse diagram: Romakasiddhānta. 35. —Saurasiddhānta. 36. Colour of eclipses. 37. Conditions for non-prediction of eclipses. 38. —Inscriptional references: Lunar eclipses. 38. Solar eclipses.

##### 17. Phases of the Moon ... 241

1. Periodical appearance of the Moon. 2. Moon's luminosity. 3. Conditions of Moon's visibility. 4. Preliminaries for computation. 5. Visibility corrections: Ākṣa, Āyana and the Third. 6. Rising and setting of the Moon. 7. Moon's shadow. 8. Computation of Moon's cusps. 9. Moon's cusps—diagram.

##### 18. Heliacal rising and setting of Planets and Stars ... 254

1. Heliacal rising and setting of planets. 2. Days of rising and setting. 3. Planetary elongation for rising and setting. 4. Visibility corrections. 5. Computation of rising and setting. 6. Jupiter's rising and setting. 7. Venus: Rising and setting. 8. Rising and setting of a star. 9. Canopus: Rising.

##### 19. Conjunction of Planets ... 264

1. Types of planetary conjunctions. 2. Conjunction: Principle of computation. 3. Computation of conjunction.

##### 20. Conjunction of Stars and Planets ... 271

1. Conjunction of stars and planets. 2. Principle of planet-star conjunction. 3. Occultation of stars by planets. 4. Occultation of Rohiṇī by planets. 5. Occultation of stars by the Moon. 6. Time of star-planet conjunction.

#### V. INNOVATIVE TRENDS

##### 21. Novel Innovations ... 274

1. True longitude computation on the sphere of the zodiac. 2. Computation of True Moon. 3. Simplified astronomical procedures.



#### IV. OCCULTATION

##### 16. Eclipses ... 196

1. Cause stated in the Ṛgveda. 2. Cause of the lunar eclipse. 3. Lunar eclipse: Principle of computation. 4. Lunar eclipse computation: Vāsiṣṭha and Pauliṣa. 5. —Saurasiddhānta. 6. —Āryabhaṭīya. 7. —Āryabhaṭa's Midnight system. 8. —Emendation by Brahmagupta. 9. —Bhāskara I. 10. —Lalla. 11. —Bhāskara II. 12. —Karaṇaratna. 13. —Śrīpati. 14. —Vākyakaraṇa. 15. —Grahalāghava. 16. Lunar eclipse diagram: Vāsiṣṭha Pauliṣa. 17. —Āryabhaṭa's Midnight system. 18. —Bhāskara I. 19. —Lalla. 20. —Sūryasiddhānta. 21. —Bhāskara II. 22. —Karaṇaratna. 23. Solar eclipse: Computation: Pauliṣa. 24. —Romakasiddhānta. 25. —Saurasiddhānta. 26. —Āryabhaṭa's Midnight system. 27. —Bhāskara I. 28. —Lalla. 29. —Mahāsiddhānta. 30. —Bhāskara II. 31. —Karaṇaratna. 32. —Śrīpati. 33. —Grahalāghava. 34. —Solar eclipse diagram: Romakasiddhānta. 35. —Saurasiddhānta. 36. Colour of eclipses. 37. Conditions for non-prediction of eclipses. 38. —Inscriptional references: Lunar eclipses. 38. Solar eclipses.

##### 17. Phases of the Moon ... 241

1. Periodical appearance of the Moon. 2. Moon's luminosity. 3. Conditions of Moon's visibility. 4. Preliminaries for computation. 5. Visibility corrections: Ākṣa, Āyana and the Third. 6. Rising and setting of the Moon. 7. Moon's shadow. 8. Computation of Moon's cusps. 9. Moon's cusps—diagram.

##### 18. Heliacal rising and setting of Planets and Stars ... 254

1. Heliacal rising and setting of planets. 2. Days of rising and setting. 3. Planetary elongation for rising and setting. 4. Visibility corrections. 5. Computation of rising and setting. 6. Jupiter's rising and setting. 7. Venus: Rising and setting. 8. Rising and setting of a star. 9. Canopus: Rising.

##### 19. Conjunction of Planets ... 264

1. Types of planetary conjunctions. 2. Conjunction: Principle of computation. 3. Computation of conjunction.

##### 20. Conjunction of Stars and Planets ... 271

1. Conjunction of stars and planets. 2. Principle of planet-star conjunction. 3. Occultation of stars by planets. 4. Occultation of Rohiṇī by planets. 5. Occultation of stars by the Moon. 6. Time of star-planet conjunction.

#### V. INNOVATIVE TRENDS

##### 21. Novel Innovations ... 274

1. True longitude computation on the sphere of the zodiac. 2. Computation of True Moon. 3. Simplified astronomical procedures.

#### IV. OCCULTATION

##### 16. Eclipses ... 196

1. Cause stated in the Ṛgveda. 2. Cause of the lunar eclipse. 3. Lunar eclipse: Principle of computation. 4. Lunar eclipse computation: Vāsiṣṭha and Pauliṣa. 5. —Saurasiddhānta. 6. —Āryabhaṭīya. 7. —Āryabhaṭa's Midnight system. 8. —Emendation by Brahmagupta. 9. —Bhāskara I. 10. —Lalla. 11. —Bhāskara II. 12. —Karaṇaratna. 13. —Śrīpati. 14. —Vākyakaraṇa. 15. —Grahalāghava. 16. Lunar eclipse diagram: Vāsiṣṭha Pauliṣa. 17. —Āryabhaṭa's Midnight system. 18. —Bhāskara I. 19. —Lalla. 20. —Sūryasiddhānta. 21. —Bhāskara II. 22. —Karaṇaratna. 23. Solar eclipse: Computation: Pauliṣa. 24. —Romakasiddhānta. 25. —Saurasiddhānta. 26. —Āryabhaṭa's Midnight system. 27. —Bhāskara I. 28. —Lalla. 29. —Mahāsiddhānta. 30. —Bhāskara II. 31. —Karaṇaratna. 32. —Śrīpati. 33. —Grahalāghava. 34. —Solar eclipse diagram: Romakasiddhānta. 35. —Saurasiddhānta. 36. Colour of eclipses. 37. Conditions for non-prediction of eclipses. 38. —Inscriptional references: Lunar eclipses. 38. Solar eclipses.

##### 17. Phases of the Moon ... 241

1. Periodical appearance of the Moon. 2. Moon's luminosity. 3. Conditions of Moon's visibility. 4. Preliminaries for computation. 5. Visibility corrections: Ākṣa, Āyana and the Third. 6. Rising and setting of the Moon. 7. Moon's shadow. 8. Computation of Moon's cusps. 9. Moon's cusps—diagram.

##### 18. Heliacal rising and setting of Planets and Stars ... 254

1. Heliacal rising and setting of planets. 2. Days of rising and setting. 3. Planetary elongation for rising and setting. 4. Visibility corrections. 5. Computation of rising and setting. 6. Jupiter's rising and setting. 7. Venus: Rising and setting. 8. Rising and setting of a star. 9. Canopus: Rising.

##### 19. Conjunction of Planets ... 264

1. Types of planetary conjunctions. 2. Conjunction: Principle of computation. 3. Computation of conjunction.

##### 20. Conjunction of Stars and Planets ... 271

1. Conjunction of stars and planets. 2. Principle of planet-star conjunction. 3. Occultation of stars by planets. 4. Occultation of Rohiṇī by planets. 5. Occultation of stars by the Moon. 6. Time of star-planet conjunction.

#### V. INNOVATIVE TRENDS

##### 21. Novel Innovations ... 274

1. True longitude computation on the sphere of the zodiac. 2. Computation of True Moon. 3. Simplified astronomical procedures.

#### IV. OCCULTATION

##### 16. Eclipses ... 196

1. Cause stated in the Ṛgveda. 2. Cause of the lunar eclipse. 3. Lunar eclipse: Principle of computation. 4. Lunar eclipse computation: Vāsiṣṭha and Pauliṣa. 5. —Saurasiddhānta. 6. —Āryabhaṭīya. 7. —Āryabhaṭa's Midnight system. 8. —Emendation by Brahmagupta. 9. —Bhāskara I. 10. —Lalla. 11. —Bhāskara II. 12. —Karaṇaratna. 13. —Śrīpati. 14. —Vākyakaraṇa. 15. —Grahalāghava. 16. Lunar eclipse diagram: Vāsiṣṭha Pauliṣa. 17. —Āryabhaṭa's Midnight system. 18. —Bhāskara I. 19. —Lalla. 20. —Sūryasiddhānta. 21. —Bhāskara II. 22. —Karaṇaratna. 23. Solar eclipse: Computation: Pauliṣa. 24. —Romakasiddhānta. 25. —Saurasiddhānta. 26. —Āryabhaṭa's Midnight system. 27. —Bhāskara I. 28. —Lalla. 29. —Mahāsiddhānta. 30. —Bhāskara II. 31. —Karaṇaratna. 32. —Śrīpati. 33. —Grahalāghava. 34. —Solar eclipse diagram: Romakasiddhānta. 35. —Saurasiddhānta. 36. Colour of eclipses. 37. Conditions for non-prediction of eclipses. 38. —Inscriptional references: Lunar eclipses. 38. Solar eclipses.

##### 17. Phases of the Moon ... 241

1. Periodical appearance of the Moon. 2. Moon's luminosity. 3. Conditions of Moon's visibility. 4. Preliminaries for computation. 5. Visibility corrections: Ākṣa, Āyana and the Third. 6. Rising and setting of the Moon. 7. Moon's shadow. 8. Computation of Moon's cusps. 9. Moon's cusps—diagram.

##### 18. Heliacal rising and setting of Planets and Stars ... 254

1. Heliacal rising and setting of planets. 2. Days of rising and setting. 3. Planetary elongation for rising and setting. 4. Visibility corrections. 5. Computation of rising and setting. 6. Jupiter's rising and setting. 7. Venus: Rising and setting. 8. Rising and setting of a star. 9. Canopus: Rising.

##### 19. Conjunction of Planets ... 264

1. Types of planetary conjunctions. 2. Conjunction: Principle of computation. 3. Computation of conjunction.

##### 20. Conjunction of Stars and Planets ... 271

1. Conjunction of stars and planets. 2. Principle of planet-star conjunction. 3. Occultation of stars by planets. 4. Occultation of Rohiṇī by planets. 5. Occultation of stars by the Moon. 6. Time of star-planet conjunction.

#### V. INNOVATIVE TRENDS

##### 21. Novel Innovations ... 274

1. True longitude computation on the sphere of the zodiac. 2. Computation of True Moon. 3. Simplified astronomical procedures.

#### IV. OCCULTATION

##### 16. Eclipses ... 196

1. Cause stated in the Ṛgveda. 2. Cause of the lunar eclipse. 3. Lunar eclipse: Principle of computation. 4. Lunar eclipse computation: Vāsiṣṭha and Pauliṣa. 5. —Saurasiddhānta. 6. —Āryabhaṭīya. 7. —Āryabhaṭa's Midnight system. 8. —Emendation by Brahmagupta. 9. —Bhāskara I. 10. —Lalla. 11. —Bhāskara II. 12. —Karaṇaratna. 13. —Śrīpati. 14. —Vākyakaraṇa. 15. —Grahalāghava. 16. Lunar eclipse diagram: Vāsiṣṭha Pauliṣa. 17. —Āryabhaṭa's Midnight system. 18. —Bhāskara I. 19. —Lalla. 20. —Sūryasiddhānta. 21. —Bhāskara II. 22. —Karaṇaratna. 23. Solar eclipse: Computation: Pauliṣa. 24. —Romakasiddhānta. 25. —Saurasiddhānta. 26. —Āryabhaṭa's Midnight system. 27. —Bhāskara I. 28. —Lalla. 29. —Mahāsiddhānta. 30. —Bhāskara II. 31. —Karaṇaratna. 32. —Śrīpati. 33. —Grahalāghava. 34. —Solar eclipse diagram: Romakasiddhānta. 35. —Saurasiddhānta. 36. Colour of eclipses. 37. Conditions for non-prediction of eclipses. 38. —Inscriptional references: Lunar eclipses. 38. Solar eclipses.

##### 17. Phases of the Moon ... 241

1. Periodical appearance of the Moon. 2. Moon's luminosity. 3. Conditions of Moon's visibility. 4. Preliminaries for computation. 5. Visibility corrections: Ākṣa, Āyana and the Third. 6. Rising and setting of the Moon. 7. Moon's shadow. 8. Computation of Moon's cusps. 9. Moon's cusps—diagram.

##### 18. Heliacal rising and setting of Planets and Stars ... 254

1. Heliacal rising and setting of planets. 2. Days of rising and setting. 3. Planetary elongation for rising and setting. 4. Visibility corrections. 5. Computation of rising and setting. 6. Jupiter's rising and setting. 7. Venus: Rising and setting. 8. Rising and setting of a star. 9. Canopus: Rising.

##### 19. Conjunction of Planets ... 264

1. Types of planetary conjunctions. 2. Conjunction: Principle of computation. 3. Computation of conjunction.

##### 20. Conjunction of Stars and Planets ... 271

1. Conjunction of stars and planets. 2. Principle of planet-star conjunction. 3. Occultation of stars by planets. 4. Occultation of Rohiṇī by planets. 5. Occultation of stars by the Moon. 6. Time of star-planet conjunction.

#### V. INNOVATIVE TRENDS

##### 21. Novel Innovations ... 274

1. True longitude computation on the sphere of the zodiac. 2. Computation of True Moon. 3. Simplified astronomical procedures.

#### IV. OCCULTATION

##### 16. Eclipses ... 196

1. Cause stated in the Ṛgveda. 2. Cause of the lunar eclipse. 3. Lunar eclipse: Principle of computation. 4. Lunar eclipse computation: Vāsiṣṭha and Pauliṣa. 5. —Saurasiddhānta. 6. —Āryabhaṭīya. 7. —Āryabhaṭa's Midnight system. 8. —Emendation by Brahmagupta. 9. —Bhāskara I. 10. —Lalla. 11. —Bhāskara II. 12. —Karaṇaratna. 13. —Śrīpati. 14. —Vākyakaraṇa. 15. —Grahalāghava. 16. Lunar eclipse diagram: Vāsiṣṭha Pauliṣa. 17. —Āryabhaṭa's Midnight system. 18. —Bhāskara I. 19. —Lalla. 20. —Sūryasiddhānta. 21. —Bhāskara II. 22. —Karaṇaratna. 23. Solar eclipse: Computation: Pauliṣa. 24. —Romakasiddhānta. 25. —Saurasiddhānta. 26. —Āryabhaṭa's Midnight system. 27. —Bhāskara I. 28. —Lalla. 29. —Mahāsiddhānta. 30. —Bhāskara II. 31. —Karaṇaratna. 32. —Śrīpati. 33. —Grahalāghava. 34. —Solar eclipse diagram: Romakasiddhānta. 35. —Saurasiddhānta. 36. Colour of eclipses. 37. Conditions for non-prediction of eclipses. 38. —Inscriptional references: Lunar eclipses. 38. Solar eclipses.

##### 17. Phases of the Moon ... 241

1. Periodical appearance of the Moon. 2. Moon's luminosity. 3. Conditions of Moon's visibility. 4. Preliminaries for computation. 5. Visibility corrections: Ākṣa, Āyana and the Third. 6. Rising and setting of the Moon. 7. Moon's shadow. 8. Computation of Moon's cusps. 9. Moon's cusps—diagram.

##### 18. Heliacal rising and setting of Planets and Stars ... 254

1. Heliacal rising and setting of planets. 2. Days of rising and setting. 3. Planetary elongation for rising and setting. 4. Visibility corrections. 5. Computation of rising and setting. 6. Jupiter's rising and setting. 7. Venus: Rising and setting. 8. Rising and setting of a star. 9. Canopus: Rising.

##### 19. Conjunction of Planets ... 264

1. Types of planetary conjunctions. 2. Conjunction: Principle of computation. 3. Computation of conjunction.

##### 20. Conjunction of Stars and Planets ... 271

1. Conjunction of stars and planets. 2. Principle of planet-star conjunction. 3. Occultation of stars by planets. 4. Occultation of Rohiṇī by planets. 5. Occultation of stars by the Moon. 6. Time of star-planet conjunction.

#### V. INNOVATIVE TRENDS

##### 21. Novel Innovations ... 274

1. True longitude computation on the sphere of the zodiac. 2. Computation of True Moon. 3. Simplified astronomical procedures.

#### IV. OCCULTATION

##### 16. Eclipses ... 196

1. Cause stated in the Ṛgveda. 2. Cause of the lunar eclipse. 3. Lunar eclipse: Principle of computation. 4. Lunar eclipse computation: Vāsiṣṭha and Pauliṣa. 5. —Saurasiddhānta. 6. —Āryabhaṭīya. 7. —Āryabhaṭa's Midnight system. 8. —Emendation by Brahmagupta. 9. —Bhāskara I. 10. —Lalla. 11. —Bhāskara II. 12. —Karaṇaratna. 13. —Śrīpati. 14. —Vākyakaraṇa. 15. —Grahalāghava. 16. Lunar eclipse diagram: Vāsiṣṭha Pauliṣa. 17. —Āryabhaṭa's Midnight system. 18. —Bhāskara I. 19. —Lalla. 20. —Sūryasiddhānta. 21. —Bhāskara II. 22. —Karaṇaratna. 23. Solar eclipse: Computation: Pauliṣa. 24. —Romakasiddhānta. 25. —Saurasiddhānta. 26. —Āryabhaṭa's Midnight system. 27. —Bhāskara I. 28. —Lalla. 29. —Mahāsiddhānta. 30. —Bhāskara II. 31. —Karaṇaratna. 32. —Śrīpati. 33. —Grahalāghava. 34. —Solar eclipse diagram: Romakasiddhānta. 35. —Saurasiddhānta. 36. Colour of eclipses. 37. Conditions for non-prediction of eclipses. 38. —Inscriptional references: Lunar eclipses. 38. Solar eclipses.

##### 17. Phases of the Moon ... 241

1. Periodical appearance of the Moon. 2. Moon's luminosity. 3. Conditions of Moon's visibility. 4. Preliminaries for computation. 5. Visibility corrections: Ākṣa, Āyana and the Third. 6. Rising and setting of the Moon. 7. Moon's shadow. 8. Computation of Moon's cusps. 9. Moon's cusps—diagram.

##### 18. Heliacal rising and setting of Planets and Stars ... 254

1. Heliacal rising and setting of planets. 2. Days of rising and setting. 3. Planetary elongation for rising and setting. 4. Visibility corrections. 5. Computation of rising and setting. 6. Jupiter's rising and setting. 7. Venus: Rising and setting. 8. Rising and setting of a star. 9. Canopus: Rising.

##### 19. Conjunction of Planets ... 264

1. Types of planetary conjunctions. 2. Conjunction: Principle of computation. 3. Computation of conjunction.

##### 20. Conjunction of Stars and Planets ... 271

1. Conjunction of stars and planets. 2. Principle of planet-star conjunction. 3. Occultation of stars by planets. 4. Occultation of Rohiṇī by planets. 5. Occultation of stars by the Moon. 6. Time of star-planet conjunction.

#### V. INNOVATIVE TRENDS

##### 21. Novel Innovations ... 274

1. True longitude computation on the sphere of the zodiac. 2. Computation of True Moon. 3. Simplified astronomical procedures.

#### IV. OCCULTATION

##### 16. Eclipses ... 196

1. Cause stated in the Ṛgveda. 2. Cause of the lunar eclipse. 3. Lunar eclipse: Principle of computation. 4. Lunar eclipse computation: Vāsiṣṭha and Pauliṣa. 5. —Saurasiddhānta. 6. —Āryabhaṭīya. 7. —Āryabhaṭa's Midnight system. 8. —Emendation by Brahmagupta. 9. —Bhāskara I. 10. —Lalla. 11. —Bhāskara II. 12. —Karaṇaratna. 13. —Śrīpati. 14. —Vākyakaraṇa. 15. —Grahalāghava. 16. Lunar eclipse diagram: Vāsiṣṭha Pauliṣa. 17. —Āryabhaṭa's Midnight system. 18. —Bhāskara I. 19. —Lalla. 20. —Sūryasiddhānta. 21. —Bhāskara II. 22. —Karaṇaratna. 23. Solar eclipse: Computation: Pauliṣa. 24. —Romakasiddhānta. 25. —Saurasiddhānta. 26. —Āryabhaṭa's Midnight system. 27. —Bhāskara I. 28. —Lalla. 29. —Mahāsiddhānta. 30. —Bhāskara II. 31. —Karaṇaratna. 32. —Śrīpati. 33. —Grahalāghava. 34. —Solar eclipse diagram: Romakasiddhānta. 35. —Saurasiddhānta. 36. Colour of eclipses. 37. Conditions for non-prediction of eclipses. 38. —Inscriptional references: Lunar eclipses. 38. Solar eclipses.

##### 17. Phases of the Moon ... 241

1. Periodical appearance of the Moon. 2. Moon's luminosity. 3. Conditions of Moon's visibility. 4. Preliminaries for computation. 5. Visibility corrections: Ākṣa, Āyana and the Third. 6. Rising and setting of the Moon. 7. Moon's shadow. 8. Computation of Moon's cusps. 9. Moon's cusps—diagram.

##### 18. Heliacal rising and setting of Planets and Stars ... 254

1. Heliacal rising and setting of planets. 2. Days of rising and setting. 3. Planetary elongation for rising and setting. 4. Visibility corrections. 5. Computation of rising and setting. 6. Jupiter's rising and setting. 7. Venus: Rising and setting. 8. Rising and setting of a star. 9. Canopus: Rising.

##### 19. Conjunction of Planets ... 264

1. Types of planetary conjunctions. 2. Conjunction: Principle of computation. 3. Computation of conjunction.

##### 20. Conjunction of Stars and Planets ... 271

1. Conjunction of stars and planets. 2. Principle of planet-star conjunction. 3. Occultation of stars by planets. 4. Occultation of Rohiṇī by planets. 5. Occultation of stars by the Moon. 6. Time of star-planet conjunction.

#### V. INNOVATIVE TRENDS

##### 21. Novel Innovations ... 274

1. True longitude computation on the sphere of the zodiac. 2. Computation of True Moon. 3. Simplified astronomical procedures.

#### IV. OCCULTATION

##### 16. Eclipses ... 196

1. Cause stated in the Ṛgveda. 2. Cause of the lunar eclipse. 3. Lunar eclipse: Principle of computation. 4. Lunar eclipse computation: Vāsiṣṭha and Pauliṣa. 5. —Saurasiddhānta. 6. —Āryabhaṭīya. 7. —Āryabhaṭa's Midnight system. 8. —Emendation by Brahmagupta. 9. —Bhāskara I. 10. —Lalla. 11. —Bhāskara II. 12. —Karaṇaratna. 13. —Śrīpati. 14. —Vākyakaraṇa. 15. —Grahalāghava. 16. Lunar eclipse diagram: Vāsiṣṭha Pauliṣa. 17. —Āryabhaṭa's Midnight system. 18. —Bhāskara I. 19. —Lalla. 20. —Sūryasiddhānta. 21. —Bhāskara II. 22. —Karaṇaratna. 23. Solar eclipse: Computation: Pauliṣa. 24. —Romakasiddhānta. 25. —Saurasiddhānta. 26. —Āryabhaṭa's Midnight system. 27. —Bhāskara I. 28. —Lalla. 29. —Mahāsiddhānta. 30. —Bhāskara II. 31. —Karaṇaratna. 32. —Śrīpati. 33. —Grahalāghava. 34. —Solar eclipse diagram: Romakasiddhānta. 35. —Saurasiddhānta. 36. Colour of eclipses. 37. Conditions for non-prediction of eclipses. 38. —Inscriptional references: Lunar eclipses. 38. Solar eclipses.

##### 17. Phases of the Moon ... 241

1. Periodical appearance of the Moon. 2. Moon's luminosity. 3. Conditions of Moon's visibility. 4. Preliminaries for computation. 5. Visibility corrections: Ākṣa, Āyana and the Third. 6. Rising and setting of the Moon. 7. Moon's shadow. 8. Computation of Moon's cusps. 9. Moon's cusps—diagram.

##### 18. Heliacal rising and setting of Planets and Stars ... 254

1. Heliacal rising and setting of planets. 2. Days of rising and setting. 3. Planetary elongation for rising and setting. 4. Visibility corrections. 5. Computation of rising and setting. 6. Jupiter's rising and setting. 7. Venus: Rising and setting. 8. Rising and setting of a star. 9. Canopus: Rising.

##### 19. Conjunction of Planets ... 264

1. Types of planetary conjunctions. 2. Conjunction: Principle of computation. 3. Computation of conjunction.

##### 20. Conjunction of Stars and Planets ... 271

1. Conjunction of stars and planets. 2. Principle of planet-star conjunction. 3. Occultation of stars by planets. 4. Occultation of Rohiṇī by planets. 5. Occultation of stars by the Moon. 6. Time of star-planet conjunction.

#### V. INNOVATIVE TRENDS

##### 21. Novel Innovations ... 274

1. True longitude computation on the sphere of the zodiac. 2. Computation of True Moon. 3. Simplified astronomical procedures.



# APPENDICES

## APPENDIX I

## TABLE OF INDIAN ERAS

ERA	Zero-year of Era	Year of era current in 1954 A.D. (latterpart)	Date of commencement in 1954 A.D.	Year-beginning		Pūrṇimānta or Amānta (Lunar months)	Provenance	Remarks
				Solar	Luni-Solar			
Kali yuga	A.D. —3101	5055	April	Meṣādi (Ver. equi.)	Caitra S 1	—	—	Extrapolated
<i>Saptarṣi</i>	—3176	—	—	—	Caitra S 1	Pūrṇimānta	Kashmir	—
<i>Tudhishīra</i>	—2448	—	—	—	—	—	—	—
<i>Laukika</i>	724 (?)	—	—	—	Vaiśākha S 15	—	Multan & Kashmir	Adopted by Kalhaṇa
Buddha-nirvāṇa	—544	2498	May 17	—	Kārtika S 1	—	Ceylon	—
Mahāvīra-nirvāṇa	—527	2481	—	—	Caitra S 1	Pūrṇimānta	—	—
Vikrama (I)	—57	2011	April 4	Ver. equi.	Caitra S 1	Amānta	N. India except Bengal	Earlier known as Kṛta or Mālavagana
” (II)	—57	2011	Oct. 27	—	Kārtika S 1	—	Gujarat	—
” (III)	—57	2011	July 1	—	Aṣāḍha S 1	Amānta	Kathiawar	—
Christian	0	1954	Jan. 1	Jan. 1	—	—	World	—
<b>Saka</b>	<b>78</b>	<b>1876</b>	<b>April</b>	<b>Meṣādi</b> (Ver. equi.)	<b>Caitra S 1</b>	<b>P (N. India)</b> <b>A (S. India)</b>	<b>All India</b>	<b>Astronomers' era</b>
<i>Chedi (Kālācūri)</i>	248	—	—	—	Āśvina S 1	Pūrṇimānta	Western & Central India	—
<i>Valabhi</i>	318	—	—	—	Kārtika S 1	Both P. & A.	Kathiawar & Saurashtra	From Gupta era
<i>Gupta</i>	319	—	—	—	Caitra S 1	Pūrṇimānta	Gupta empire (Gen. I. & Nep.)	—
<i>Harṣa</i>	606	—	—	—	—	—	Mathura & Kanauj	—
Hejirā	622	1374	Aug. 31	—	Muharram (Lun.)	—	—	Lunar reckoning
Bengali San	—	1361	April 14	Meṣādi	—	—	Bengal	963 + Solar years since 1556
Vilāyati	—	1362	Sept. 16	Kanyādi	—	—	Bengal & Orissa	—
Āmli	—	1362	Sept. 10	—	Bhādra S 12	—	Orissa	—
Fasli (I)	—	1362	Sept. 13	—	Bhādra K 1	Pūrṇimānta	Bengal	992 + Solar years since 1584
” (II)	—	1364	July 1	July 1	—	—	Deccan	—
” (III)	—	1364	June 8	Sun enters Mṛga. nakṣ.	—	—	Bombay	—
<i>Magi</i>	638	—	—	Meṣādi	—	—	Arakan, Chittagong	Similar to Bengali San
<i>Guhā</i>	—	—	—	—	—	—	Eastern Deccan	—
Kollam (I)	824	1130	Sept. 17	Kanyādi	—	—	North Malabar	—
” (II)	824	1130	Aug. 17	Simhādi	—	—	South Malabar	—
<i>Newar</i>	879	—	—	—	Kārtika S 1	Amānta	Nepal	In vogue till 1768 A.D., suppressed by Gurkhas
<i>Calukya Vikrama</i>	1075	—	—	—	—	—	Western Deccan	Current only for 100 years
<i>Lakṣmaṇa Sena</i>	1104-1118	—	—	—	—	—	Mithilā	—
<i>Śiṃha</i>	1113	—	—	—	Kārtika S 1	Amānta	Gujarat	Started by Siddharāja Jayasinha
<i>Tārikh Ilāhi</i>	1555	—	—	Ver. equi.	Aṣāḍha S 1	—	Akbar's empire	Introduced by Akbar (963 Hejirā)
<i>Rāja Saka</i>	1673	—	—	—	Jyēṣṭha S 13	Amānta	Maharashtra	From the coronation of Śivājī

(Source: Report of the Calendar Reform Committee, p. 258)

#### IV. OCCULTATION

##### 16. Eclipses ... 196

1. Cause stated in the Ṛgveda. 2. Cause of the lunar eclipse. 3. Lunar eclipse: Principle of computation. 4. Lunar eclipse computation: Vāsiṣṭha and Pauliṣa. 5. —Saurasiddhānta. 6. —Āryabhaṭīya. 7. —Āryabhaṭa's Midnight system. 8. —Emendation by Brahmagupta. 9. —Bhāskara I. 10. —Lalla. 11. —Bhāskara II. 12. —Karaṇaratna. 13. —Śrīpati. 14. —Vākyakaraṇa. 15. —Grahalāghava. 16. Lunar eclipse diagram: Vāsiṣṭha Pauliṣa. 17. —Āryabhaṭa's Midnight system. 18. —Bhāskara I. 19. —Lalla. 20. —Sūryasiddhānta. 21. —Bhāskara II. 22. —Karaṇaratna. 23. Solar eclipse: Computation: Pauliṣa. 24. —Romakasiddhānta. 25. —Saurasiddhānta. 26. —Āryabhaṭa's Midnight system. 27. —Bhāskara I. 28. —Lalla. 29. —Mahāsiddhānta. 30. —Bhāskara II. 31. —Karaṇaratna. 32. —Śrīpati. 33. —Grahalāghava. 34. —Solar eclipse diagram: Romakasiddhānta. 35. —Saurasiddhānta. 36. Colour of eclipses. 37. Conditions for non-prediction of eclipses. 38. —Inscriptional references: Lunar eclipses. 38. Solar eclipses.

##### 17. Phases of the Moon ... 241

1. Periodical appearance of the Moon. 2. Moon's luminosity. 3. Conditions of Moon's visibility. 4. Preliminaries for computation. 5. Visibility corrections: Ākṣa, Āyana and the Third. 6. Rising and setting of the Moon. 7. Moon's shadow. 8. Computation of Moon's cusps. 9. Moon's cusps—diagram.

##### 18. Heliacal rising and setting of Planets and Stars ... 254

1. Heliacal rising and setting of planets. 2. Days of rising and setting. 3. Planetary elongation for rising and setting. 4. Visibility corrections. 5. Computation of rising and setting. 6. Jupiter's rising and setting. 7. Venus: Rising and setting. 8. Rising and setting of a star. 9. Canopus: Rising.

##### 19. Conjunction of Planets ... 264

1. Types of planetary conjunctions. 2. Conjunction: Principle of computation. 3. Computation of conjunction.

##### 20. Conjunction of Stars and Planets ... 271

1. Conjunction of stars and planets. 2. Principle of planet-star conjunction. 3. Occultation of stars by planets. 4. Occultation of Rohiṇī by planets. 5. Occultation of stars by the Moon. 6. Time of star-planet conjunction.

#### V. INNOVATIVE TRENDS

##### 21. Novel Innovations ... 274

1. True longitude computation on the sphere of the zodiac. 2. Computation of True Moon. 3. Simplified astronomical procedures.

#### IV. OCCULTATION

##### 16. Eclipses ... 196

1. Cause stated in the Ṛgveda. 2. Cause of the lunar eclipse. 3. Lunar eclipse: Principle of computation. 4. Lunar eclipse computation: Vāsiṣṭha and Pauliṣa. 5. —Saurasiddhānta. 6. —Āryabhaṭīya. 7. —Āryabhaṭa's Midnight system. 8. —Emendation by Brahmagupta. 9. —Bhāskara I. 10. —Lalla. 11. —Bhāskara II. 12. —Karaṇaratna. 13. —Śrīpati. 14. —Vākyakaraṇa. 15. —Grahalāghava. 16. Lunar eclipse diagram: Vāsiṣṭha Pauliṣa. 17. —Āryabhaṭa's Midnight system. 18. —Bhāskara I. 19. —Lalla. 20. —Sūryasiddhānta. 21. —Bhāskara II. 22. —Karaṇaratna. 23. Solar eclipse: Computation: Pauliṣa. 24. —Romakasiddhānta. 25. —Saurasiddhānta. 26. —Āryabhaṭa's Midnight system. 27. —Bhāskara I. 28. —Lalla. 29. —Mahāsiddhānta. 30. —Bhāskara II. 31. —Karaṇaratna. 32. —Śrīpati. 33. —Grahalāghava. 34. —Solar eclipse diagram: Romakasiddhānta. 35. —Saurasiddhānta. 36. Colour of eclipses. 37. Conditions for non-prediction of eclipses. 38. —Inscriptional references: Lunar eclipses. 38. Solar eclipses.

##### 17. Phases of the Moon ... 241

1. Periodical appearance of the Moon. 2. Moon's luminosity. 3. Conditions of Moon's visibility. 4. Preliminaries for computation. 5. Visibility corrections: Ākṣa, Āyana and the Third. 6. Rising and setting of the Moon. 7. Moon's shadow. 8. Computation of Moon's cusps. 9. Moon's cusps—diagram.

##### 18. Heliacal rising and setting of Planets and Stars ... 254

1. Heliacal rising and setting of planets. 2. Days of rising and setting. 3. Planetary elongation for rising and setting. 4. Visibility corrections. 5. Computation of rising and setting. 6. Jupiter's rising and setting. 7. Venus: Rising and setting. 8. Rising and setting of a star. 9. Canopus: Rising.

##### 19. Conjunction of Planets ... 264

1. Types of planetary conjunctions. 2. Conjunction: Principle of computation. 3. Computation of conjunction.

##### 20. Conjunction of Stars and Planets ... 271

1. Conjunction of stars and planets. 2. Principle of planet-star conjunction. 3. Occultation of stars by planets. 4. Occultation of Rohiṇī by planets. 5. Occultation of stars by the Moon. 6. Time of star-planet conjunction.

#### V. INNOVATIVE TRENDS

##### 21. Novel Innovations ... 274

1. True longitude computation on the sphere of the zodiac. 2. Computation of True Moon. 3. Simplified astronomical procedures.

#### IV. OCCULTATION

##### 16. Eclipses ... 196

1. Cause stated in the Ṛgveda. 2. Cause of the lunar eclipse. 3. Lunar eclipse: Principle of computation. 4. Lunar eclipse computation: Vāsiṣṭha and Pauliṣa. 5. —Saurasiddhānta. 6. —Āryabhaṭīya. 7. —Āryabhaṭa's Midnight system. 8. —Emendation by Brahmagupta. 9. —Bhāskara I. 10. —Lalla. 11. —Bhāskara II. 12. —Karaṇaratna. 13. —Śrīpati. 14. —Vākyakaraṇa. 15. —Grahalāghava. 16. Lunar eclipse diagram: Vāsiṣṭha Pauliṣa. 17. —Āryabhaṭa's Midnight system. 18. —Bhāskara I. 19. —Lalla. 20. —Sūryasiddhānta. 21. —Bhāskara II. 22. —Karaṇaratna. 23. Solar eclipse: Computation: Pauliṣa. 24. —Romakasiddhānta. 25. —Saurasiddhānta. 26. —Āryabhaṭa's Midnight system. 27. —Bhāskara I. 28. —Lalla. 29. —Mahāsiddhānta. 30. —Bhāskara II. 31. —Karaṇaratna. 32. —Śrīpati. 33. —Grahalāghava. 34. —Solar eclipse diagram: Romakasiddhānta. 35. —Saurasiddhānta. 36. Colour of eclipses. 37. Conditions for non-prediction of eclipses. 38. —Inscriptional references: Lunar eclipses. 38. Solar eclipses.

##### 17. Phases of the Moon ... 241

1. Periodical appearance of the Moon. 2. Moon's luminosity. 3. Conditions of Moon's visibility. 4. Preliminaries for computation. 5. Visibility corrections: Ākṣa, Āyana and the Third. 6. Rising and setting of the Moon. 7. Moon's shadow. 8. Computation of Moon's cusps. 9. Moon's cusps—diagram.

##### 18. Heliacal rising and setting of Planets and Stars ... 254

1. Heliacal rising and setting of planets. 2. Days of rising and setting. 3. Planetary elongation for rising and setting. 4. Visibility corrections. 5. Computation of rising and setting. 6. Jupiter's rising and setting. 7. Venus: Rising and setting. 8. Rising and setting of a star. 9. Canopus: Rising.

##### 19. Conjunction of Planets ... 264

1. Types of planetary conjunctions. 2. Conjunction: Principle of computation. 3. Computation of conjunction.

##### 20. Conjunction of Stars and Planets ... 271

1. Conjunction of stars and planets. 2. Principle of planet-star conjunction. 3. Occultation of stars by planets. 4. Occultation of Rohiṇī by planets. 5. Occultation of stars by the Moon. 6. Time of star-planet conjunction.

#### V. INNOVATIVE TRENDS

##### 21. Novel Innovations ... 274

1. True longitude computation on the sphere of the zodiac. 2. Computation of True Moon. 3. Simplified astronomical procedures.

#### IV. OCCULTATION

##### 16. Eclipses ... 196

1. Cause stated in the Ṛgveda. 2. Cause of the lunar eclipse. 3. Lunar eclipse: Principle of computation. 4. Lunar eclipse computation: Vāsiṣṭha and Pauliṣa. 5. —Saurasiddhānta. 6. —Āryabhaṭīya. 7. —Āryabhaṭa's Midnight system. 8. —Emendation by Brahmagupta. 9. —Bhāskara I. 10. —Lalla. 11. —Bhāskara II. 12. —Karaṇaratna. 13. —Śrīpati. 14. —Vākyakaraṇa. 15. —Grahalāghava. 16. Lunar eclipse diagram: Vāsiṣṭha Pauliṣa. 17. —Āryabhaṭa's Midnight system. 18. —Bhāskara I. 19. —Lalla. 20. —Sūryasiddhānta. 21. —Bhāskara II. 22. —Karaṇaratna. 23. Solar eclipse: Computation: Pauliṣa. 24. —Romakasiddhānta. 25. —Saurasiddhānta. 26. —Āryabhaṭa's Midnight system. 27. —Bhāskara I. 28. —Lalla. 29. —Mahāsiddhānta. 30. —Bhāskara II. 31. —Karaṇaratna. 32. —Śrīpati. 33. —Grahalāghava. 34. —Solar eclipse diagram: Romakasiddhānta. 35. —Saurasiddhānta. 36. Colour of eclipses. 37. Conditions for non-prediction of eclipses. 38. —Inscriptional references: Lunar eclipses. 38. Solar eclipses.

##### 17. Phases of the Moon ... 241

1. Periodical appearance of the Moon. 2. Moon's luminosity. 3. Conditions of Moon's visibility. 4. Preliminaries for computation. 5. Visibility corrections: Ākṣa, Āyana and the Third. 6. Rising and setting of the Moon. 7. Moon's shadow. 8. Computation of Moon's cusps. 9. Moon's cusps—diagram.

##### 18. Heliacal rising and setting of Planets and Stars ... 254

1. Heliacal rising and setting of planets. 2. Days of rising and setting. 3. Planetary elongation for rising and setting. 4. Visibility corrections. 5. Computation of rising and setting. 6. Jupiter's rising and setting. 7. Venus: Rising and setting. 8. Rising and setting of a star. 9. Canopus: Rising.

##### 19. Conjunction of Planets ... 264

1. Types of planetary conjunctions. 2. Conjunction: Principle of computation. 3. Computation of conjunction.

##### 20. Conjunction of Stars and Planets ... 271

1. Conjunction of stars and planets. 2. Principle of planet-star conjunction. 3. Occultation of stars by planets. 4. Occultation of Rohiṇī by planets. 5. Occultation of stars by the Moon. 6. Time of star-planet conjunction.

#### V. INNOVATIVE TRENDS

##### 21. Novel Innovations ... 274

1. True longitude computation on the sphere of the zodiac. 2. Computation of True Moon. 3. Simplified astronomical procedures.

#### IV. OCCULTATION

##### 16. Eclipses ... 196

1. Cause stated in the Ṛgveda. 2. Cause of the lunar eclipse. 3. Lunar eclipse: Principle of computation. 4. Lunar eclipse computation: Vāsiṣṭha and Pauliṣa. 5. —Saurasiddhānta. 6. —Āryabhaṭīya. 7. —Āryabhaṭa's Midnight system. 8. —Emendation by Brahmagupta. 9. —Bhāskara I. 10. —Lalla. 11. —Bhāskara II. 12. —Karaṇaratna. 13. —Śrīpati. 14. —Vākyakaraṇa. 15. —Grahalāghava. 16. Lunar eclipse diagram: Vāsiṣṭha Pauliṣa. 17. —Āryabhaṭa's Midnight system. 18. —Bhāskara I. 19. —Lalla. 20. —Sūryasiddhānta. 21. —Bhāskara II. 22. —Karaṇaratna. 23. Solar eclipse: Computation: Pauliṣa. 24. —Romakasiddhānta. 25. —Saurasiddhānta. 26. —Āryabhaṭa's Midnight system. 27. —Bhāskara I. 28. —Lalla. 29. —Mahāsiddhānta. 30. —Bhāskara II. 31. —Karaṇaratna. 32. —Śrīpati. 33. —Grahalāghava. 34. —Solar eclipse diagram: Romakasiddhānta. 35. —Saurasiddhānta. 36. Colour of eclipses. 37. Conditions for non-prediction of eclipses. 38. —Inscriptional references: Lunar eclipses. 38. Solar eclipses.

##### 17. Phases of the Moon ... 241

1. Periodical appearance of the Moon. 2. Moon's luminosity. 3. Conditions of Moon's visibility. 4. Preliminaries for computation. 5. Visibility corrections: Ākṣa, Āyana and the Third. 6. Rising and setting of the Moon. 7. Moon's shadow. 8. Computation of Moon's cusps. 9. Moon's cusps—diagram.

##### 18. Heliacal rising and setting of Planets and Stars ... 254

1. Heliacal rising and setting of planets. 2. Days of rising and setting. 3. Planetary elongation for rising and setting. 4. Visibility corrections. 5. Computation of rising and setting. 6. Jupiter's rising and setting. 7. Venus: Rising and setting. 8. Rising and setting of a star. 9. Canopus: Rising.

##### 19. Conjunction of Planets ... 264

1. Types of planetary conjunctions. 2. Conjunction: Principle of computation. 3. Computation of conjunction.

##### 20. Conjunction of Stars and Planets ... 271

1. Conjunction of stars and planets. 2. Principle of planet-star conjunction. 3. Occultation of stars by planets. 4. Occultation of Rohiṇī by planets. 5. Occultation of stars by the Moon. 6. Time of star-planet conjunction.

#### V. INNOVATIVE TRENDS

##### 21. Novel Innovations ... 274

1. True longitude computation on the sphere of the zodiac. 2. Computation of True Moon. 3. Simplified astronomical procedures.

#### IV. OCCULTATION

##### 16. Eclipses ... 196

1. Cause stated in the Ṛgveda. 2. Cause of the lunar eclipse. 3. Lunar eclipse: Principle of computation. 4. Lunar eclipse computation: Vāsiṣṭha and Pauliṣa. 5. —Saurasiddhānta. 6. —Āryabhaṭīya. 7. —Āryabhaṭa's Midnight system. 8. —Emendation by Brahmagupta. 9. —Bhāskara I. 10. —Lalla. 11. —Bhāskara II. 12. —Karaṇaratna. 13. —Śrīpati. 14. —Vākyakaraṇa. 15. —Grahalāghava. 16. Lunar eclipse diagram: Vāsiṣṭha Pauliṣa. 17. —Āryabhaṭa's Midnight system. 18. —Bhāskara I. 19. —Lalla. 20. —Sūryasiddhānta. 21. —Bhāskara II. 22. —Karaṇaratna. 23. Solar eclipse: Computation: Pauliṣa. 24. —Romakasiddhānta. 25. —Saurasiddhānta. 26. —Āryabhaṭa's Midnight system. 27. —Bhāskara I. 28. —Lalla. 29. —Mahāsiddhānta. 30. —Bhāskara II. 31. —Karaṇaratna. 32. —Śrīpati. 33. —Grahalāghava. 34. —Solar eclipse diagram: Romakasiddhānta. 35. —Saurasiddhānta. 36. Colour of eclipses. 37. Conditions for non-prediction of eclipses. 38. —Inscriptional references: Lunar eclipses. 38. Solar eclipses.

##### 17. Phases of the Moon ... 241

1. Periodical appearance of the Moon. 2. Moon's luminosity. 3. Conditions of Moon's visibility. 4. Preliminaries for computation. 5. Visibility corrections: Ākṣa, Āyana and the Third. 6. Rising and setting of the Moon. 7. Moon's shadow. 8. Computation of Moon's cusps. 9. Moon's cusps—diagram.

##### 18. Heliacal rising and setting of Planets and Stars ... 254

1. Heliacal rising and setting of planets. 2. Days of rising and setting. 3. Planetary elongation for rising and setting. 4. Visibility corrections. 5. Computation of rising and setting. 6. Jupiter's rising and setting. 7. Venus: Rising and setting. 8. Rising and setting of a star. 9. Canopus: Rising.

##### 19. Conjunction of Planets ... 264

1. Types of planetary conjunctions. 2. Conjunction: Principle of computation. 3. Computation of conjunction.

##### 20. Conjunction of Stars and Planets ... 271

1. Conjunction of stars and planets. 2. Principle of planet-star conjunction. 3. Occultation of stars by planets. 4. Occultation of Rohiṇī by planets. 5. Occultation of stars by the Moon. 6. Time of star-planet conjunction.

#### V. INNOVATIVE TRENDS

##### 21. Novel Innovations ... 274

1. True longitude computation on the sphere of the zodiac. 2. Computation of True Moon. 3. Simplified astronomical procedures.

#### IV. OCCULTATION

##### 16. Eclipses ... 196

1. Cause stated in the Ṛgveda. 2. Cause of the lunar eclipse. 3. Lunar eclipse: Principle of computation. 4. Lunar eclipse computation: Vāsiṣṭha and Pauliṣa. 5. —Saurasiddhānta. 6. —Āryabhaṭīya. 7. —Āryabhaṭa's Midnight system. 8. —Emendation by Brahmagupta. 9. —Bhāskara I. 10. —Lalla. 11. —Bhāskara II. 12. —Karaṇaratna. 13. —Śrīpati. 14. —Vākyakaraṇa. 15. —Grahalāghava. 16. Lunar eclipse diagram: Vāsiṣṭha Pauliṣa. 17. —Āryabhaṭa's Midnight system. 18. —Bhāskara I. 19. —Lalla. 20. —Sūryasiddhānta. 21. —Bhāskara II. 22. —Karaṇaratna. 23. Solar eclipse: Computation: Pauliṣa. 24. —Romakasiddhānta. 25. —Saurasiddhānta. 26. —Āryabhaṭa's Midnight system. 27. —Bhāskara I. 28. —Lalla. 29. —Mahāsiddhānta. 30. —Bhāskara II. 31. —Karaṇaratna. 32. —Śrīpati. 33. —Grahalāghava. 34. —Solar eclipse diagram: Romakasiddhānta. 35. —Saurasiddhānta. 36. Colour of eclipses. 37. Conditions for non-prediction of eclipses. 38. —Inscriptional references: Lunar eclipses. 38. Solar eclipses.

##### 17. Phases of the Moon ... 241

1. Periodical appearance of the Moon. 2. Moon's luminosity. 3. Conditions of Moon's visibility. 4. Preliminaries for computation. 5. Visibility corrections: Ākṣa, Āyana and the Third. 6. Rising and setting of the Moon. 7. Moon's shadow. 8. Computation of Moon's cusps. 9. Moon's cusps—diagram.

##### 18. Heliacal rising and setting of Planets and Stars ... 254

1. Heliacal rising and setting of planets. 2. Days of rising and setting. 3. Planetary elongation for rising and setting. 4. Visibility corrections. 5. Computation of rising and setting. 6. Jupiter's rising and setting. 7. Venus: Rising and setting. 8. Rising and setting of a star. 9. Canopus: Rising.

##### 19. Conjunction of Planets ... 264

1. Types of planetary conjunctions. 2. Conjunction: Principle of computation. 3. Computation of conjunction.

##### 20. Conjunction of Stars and Planets ... 271

1. Conjunction of stars and planets. 2. Principle of planet-star conjunction. 3. Occultation of stars by planets. 4. Occultation of Rohiṇī by planets. 5. Occultation of stars by the Moon. 6. Time of star-planet conjunction.

#### V. INNOVATIVE TRENDS

##### 21. Novel Innovations ... 274

1. True longitude computation on the sphere of the zodiac. 2. Computation of True Moon. 3. Simplified astronomical procedures.



#### IV. OCCULTATION

##### 16. Eclipses ... 196

1. Cause stated in the Ṛgveda. 2. Cause of the lunar eclipse. 3. Lunar eclipse: Principle of computation. 4. Lunar eclipse computation: Vāsiṣṭha and Pauliṣa. 5. —Saurasiddhānta. 6. —Āryabhaṭīya. 7. —Āryabhaṭa's Midnight system. 8. —Emendation by Brahmagupta. 9. —Bhāskara I. 10. —Lalla. 11. —Bhāskara II. 12. —Karaṇaratna. 13. —Śrīpati. 14. —Vākyakaraṇa. 15. —Grahalāghava. 16. Lunar eclipse diagram: Vāsiṣṭha Pauliṣa. 17. —Āryabhaṭa's Midnight system. 18. —Bhāskara I. 19. —Lalla. 20. —Sūryasiddhānta. 21. —Bhāskara II. 22. —Karaṇaratna. 23. Solar eclipse: Computation: Pauliṣa. 24. —Romakasiddhānta. 25. —Saurasiddhānta. 26. —Āryabhaṭa's Midnight system. 27. —Bhāskara I. 28. —Lalla. 29. —Mahāsiddhānta. 30. —Bhāskara II. 31. —Karaṇaratna. 32. —Śrīpati. 33. —Grahalāghava. 34. —Solar eclipse diagram: Romakasiddhānta. 35. —Saurasiddhānta. 36. Colour of eclipses. 37. Conditions for non-prediction of eclipses. 38. —Inscriptional references: Lunar eclipses. 38. Solar eclipses.

##### 17. Phases of the Moon ... 241

1. Periodical appearance of the Moon. 2. Moon's luminosity. 3. Conditions of Moon's visibility. 4. Preliminaries for computation. 5. Visibility corrections: Ākṣa, Āyana and the Third. 6. Rising and setting of the Moon. 7. Moon's shadow. 8. Computation of Moon's cusps. 9. Moon's cusps—diagram.

##### 18. Heliacal rising and setting of Planets and Stars ... 254

1. Heliacal rising and setting of planets. 2. Days of rising and setting. 3. Planetary elongation for rising and setting. 4. Visibility corrections. 5. Computation of rising and setting. 6. Jupiter's rising and setting. 7. Venus: Rising and setting. 8. Rising and setting of a star. 9. Canopus: Rising.

##### 19. Conjunction of Planets ... 264

1. Types of planetary conjunctions. 2. Conjunction: Principle of computation. 3. Computation of conjunction.

##### 20. Conjunction of Stars and Planets ... 271

1. Conjunction of stars and planets. 2. Principle of planet-star conjunction. 3. Occultation of stars by planets. 4. Occultation of Rohiṇī by planets. 5. Occultation of stars by the Moon. 6. Time of star-planet conjunction.

#### V. INNOVATIVE TRENDS

##### 21. Novel Innovations ... 274

1. True longitude computation on the sphere of the zodiac. 2. Computation of True Moon. 3. Simplified astronomical procedures.

#### IV. OCCULTATION

##### 16. Eclipses ... 196

1. Cause stated in the Ṛgveda. 2. Cause of the lunar eclipse. 3. Lunar eclipse: Principle of computation. 4. Lunar eclipse computation: Vāsiṣṭha and Pauliṣa. 5. —Saurasiddhānta. 6. —Āryabhaṭīya. 7. —Āryabhaṭa's Midnight system. 8. —Emendation by Brahmagupta. 9. —Bhāskara I. 10. —Lalla. 11. —Bhāskara II. 12. —Karaṇaratna. 13. —Śrīpati. 14. —Vākyakaraṇa. 15. —Grahalāghava. 16. Lunar eclipse diagram: Vāsiṣṭha Pauliṣa. 17. —Āryabhaṭa's Midnight system. 18. —Bhāskara I. 19. —Lalla. 20. —Sūryasiddhānta. 21. —Bhāskara II. 22. —Karaṇaratna. 23. Solar eclipse: Computation: Pauliṣa. 24. —Romakasiddhānta. 25. —Saurasiddhānta. 26. —Āryabhaṭa's Midnight system. 27. —Bhāskara I. 28. —Lalla. 29. —Mahāsiddhānta. 30. —Bhāskara II. 31. —Karaṇaratna. 32. —Śrīpati. 33. —Grahalāghava. 34. —Solar eclipse diagram: Romakasiddhānta. 35. —Saurasiddhānta. 36. Colour of eclipses. 37. Conditions for non-prediction of eclipses. 38. —Inscriptional references: Lunar eclipses. 38. Solar eclipses.

##### 17. Phases of the Moon ... 241

1. Periodical appearance of the Moon. 2. Moon's luminosity. 3. Conditions of Moon's visibility. 4. Preliminaries for computation. 5. Visibility corrections: Ākṣa, Āyana and the Third. 6. Rising and setting of the Moon. 7. Moon's shadow. 8. Computation of Moon's cusps. 9. Moon's cusps—diagram.

##### 18. Heliacal rising and setting of Planets and Stars ... 254

1. Heliacal rising and setting of planets. 2. Days of rising and setting. 3. Planetary elongation for rising and setting. 4. Visibility corrections. 5. Computation of rising and setting. 6. Jupiter's rising and setting. 7. Venus: Rising and setting. 8. Rising and setting of a star. 9. Canopus: Rising.

##### 19. Conjunction of Planets ... 264

1. Types of planetary conjunctions. 2. Conjunction: Principle of computation. 3. Computation of conjunction.

##### 20. Conjunction of Stars and Planets ... 271

1. Conjunction of stars and planets. 2. Principle of planet-star conjunction. 3. Occultation of stars by planets. 4. Occultation of Rohiṇī by planets. 5. Occultation of stars by the Moon. 6. Time of star-planet conjunction.

#### V. INNOVATIVE TRENDS

##### 21. Novel Innovations ... 274

1. True longitude computation on the sphere of the zodiac. 2. Computation of True Moon. 3. Simplified astronomical procedures.

#### IV. OCCULTATION

##### 16. Eclipses ... 196

1. Cause stated in the Ṛgveda. 2. Cause of the lunar eclipse. 3. Lunar eclipse: Principle of computation. 4. Lunar eclipse computation: Vāsiṣṭha and Pauliṣa. 5. —Saurasiddhānta. 6. —Āryabhaṭīya. 7. —Āryabhaṭa's Midnight system. 8. —Emendation by Brahmagupta. 9. —Bhāskara I. 10. —Lalla. 11. —Bhāskara II. 12. —Karaṇaratna. 13. —Śrīpati. 14. —Vākyakaraṇa. 15. —Grahalāghava. 16. Lunar eclipse diagram: Vāsiṣṭha Pauliṣa. 17. —Āryabhaṭa's Midnight system. 18. —Bhāskara I. 19. —Lalla. 20. —Sūryasiddhānta. 21. —Bhāskara II. 22. —Karaṇaratna. 23. Solar eclipse: Computation: Pauliṣa. 24. —Romakasiddhānta. 25. —Saurasiddhānta. 26. —Āryabhaṭa's Midnight system. 27. —Bhāskara I. 28. —Lalla. 29. —Mahāsiddhānta. 30. —Bhāskara II. 31. —Karaṇaratna. 32. —Śrīpati. 33. —Grahalāghava. 34. —Solar eclipse diagram: Romakasiddhānta. 35. —Saurasiddhānta. 36. Colour of eclipses. 37. Conditions for non-prediction of eclipses. 38. —Inscriptional references: Lunar eclipses. 38. Solar eclipses.

##### 17. Phases of the Moon ... 241

1. Periodical appearance of the Moon. 2. Moon's luminosity. 3. Conditions of Moon's visibility. 4. Preliminaries for computation. 5. Visibility corrections: Ākṣa, Āyana and the Third. 6. Rising and setting of the Moon. 7. Moon's shadow. 8. Computation of Moon's cusps. 9. Moon's cusps—diagram.

##### 18. Heliacal rising and setting of Planets and Stars ... 254

1. Heliacal rising and setting of planets. 2. Days of rising and setting. 3. Planetary elongation for rising and setting. 4. Visibility corrections. 5. Computation of rising and setting. 6. Jupiter's rising and setting. 7. Venus: Rising and setting. 8. Rising and setting of a star. 9. Canopus: Rising.

##### 19. Conjunction of Planets ... 264

1. Types of planetary conjunctions. 2. Conjunction: Principle of computation. 3. Computation of conjunction.

##### 20. Conjunction of Stars and Planets ... 271

1. Conjunction of stars and planets. 2. Principle of planet-star conjunction. 3. Occultation of stars by planets. 4. Occultation of Rohiṇī by planets. 5. Occultation of stars by the Moon. 6. Time of star-planet conjunction.

#### V. INNOVATIVE TRENDS

##### 21. Novel Innovations ... 274

1. True longitude computation on the sphere of the zodiac. 2. Computation of True Moon. 3. Simplified astronomical procedures.

#### IV. OCCULTATION

##### 16. Eclipses ... 196

1. Cause stated in the Ṛgveda. 2. Cause of the lunar eclipse. 3. Lunar eclipse: Principle of computation. 4. Lunar eclipse computation: Vāsiṣṭha and Pauliṣa. 5. —Saurasiddhānta. 6. —Āryabhaṭīya. 7. —Āryabhaṭa's Midnight system. 8. —Emendation by Brahmagupta. 9. —Bhāskara I. 10. —Lalla. 11. —Bhāskara II. 12. —Karaṇaratna. 13. —Śrīpati. 14. —Vākyakaraṇa. 15. —Grahalāghava. 16. Lunar eclipse diagram: Vāsiṣṭha Pauliṣa. 17. —Āryabhaṭa's Midnight system. 18. —Bhāskara I. 19. —Lalla. 20. —Sūryasiddhānta. 21. —Bhāskara II. 22. —Karaṇaratna. 23. Solar eclipse: Computation: Pauliṣa. 24. —Romakasiddhānta. 25. —Saurasiddhānta. 26. —Āryabhaṭa's Midnight system. 27. —Bhāskara I. 28. —Lalla. 29. —Mahāsiddhānta. 30. —Bhāskara II. 31. —Karaṇaratna. 32. —Śrīpati. 33. —Grahalāghava. 34. —Solar eclipse diagram: Romakasiddhānta. 35. —Saurasiddhānta. 36. Colour of eclipses. 37. Conditions for non-prediction of eclipses. 38. —Inscriptional references: Lunar eclipses. 38. Solar eclipses.

##### 17. Phases of the Moon ... 241

1. Periodical appearance of the Moon. 2. Moon's luminosity. 3. Conditions of Moon's visibility. 4. Preliminaries for computation. 5. Visibility corrections: Ākṣa, Āyana and the Third. 6. Rising and setting of the Moon. 7. Moon's shadow. 8. Computation of Moon's cusps. 9. Moon's cusps—diagram.

##### 18. Heliacal rising and setting of Planets and Stars ... 254

1. Heliacal rising and setting of planets. 2. Days of rising and setting. 3. Planetary elongation for rising and setting. 4. Visibility corrections. 5. Computation of rising and setting. 6. Jupiter's rising and setting. 7. Venus: Rising and setting. 8. Rising and setting of a star. 9. Canopus: Rising.

##### 19. Conjunction of Planets ... 264

1. Types of planetary conjunctions. 2. Conjunction: Principle of computation. 3. Computation of conjunction.

##### 20. Conjunction of Stars and Planets ... 271

1. Conjunction of stars and planets. 2. Principle of planet-star conjunction. 3. Occultation of stars by planets. 4. Occultation of Rohiṇī by planets. 5. Occultation of stars by the Moon. 6. Time of star-planet conjunction.

#### V. INNOVATIVE TRENDS

##### 21. Novel Innovations ... 274

1. True longitude computation on the sphere of the zodiac. 2. Computation of True Moon. 3. Simplified astronomical procedures.

#### IV. OCCULTATION

##### 16. Eclipses ... 196

1. Cause stated in the Ṛgveda. 2. Cause of the lunar eclipse. 3. Lunar eclipse: Principle of computation. 4. Lunar eclipse computation: Vāsiṣṭha and Pauliṣa. 5. —Saurasiddhānta. 6. —Āryabhaṭīya. 7. —Āryabhaṭa's Midnight system. 8. —Emendation by Brahmagupta. 9. —Bhāskara I. 10. —Lalla. 11. —Bhāskara II. 12. —Karaṇaratna. 13. —Śrīpati. 14. —Vākyakaraṇa. 15. —Grahalāghava. 16. Lunar eclipse diagram: Vāsiṣṭha Pauliṣa. 17. —Āryabhaṭa's Midnight system. 18. —Bhāskara I. 19. —Lalla. 20. —Sūryasiddhānta. 21. —Bhāskara II. 22. —Karaṇaratna. 23. Solar eclipse: Computation: Pauliṣa. 24. —Romakasiddhānta. 25. —Saurasiddhānta. 26. —Āryabhaṭa's Midnight system. 27. —Bhāskara I. 28. —Lalla. 29. —Mahāsiddhānta. 30. —Bhāskara II. 31. —Karaṇaratna. 32. —Śrīpati. 33. —Grahalāghava. 34. —Solar eclipse diagram: Romakasiddhānta. 35. —Saurasiddhānta. 36. Colour of eclipses. 37. Conditions for non-prediction of eclipses. 38. —Inscriptional references: Lunar eclipses. 38. Solar eclipses.

##### 17. Phases of the Moon ... 241

1. Periodical appearance of the Moon. 2. Moon's luminosity. 3. Conditions of Moon's visibility. 4. Preliminaries for computation. 5. Visibility corrections: Ākṣa, Āyana and the Third. 6. Rising and setting of the Moon. 7. Moon's shadow. 8. Computation of Moon's cusps. 9. Moon's cusps—diagram.

##### 18. Heliacal rising and setting of Planets and Stars ... 254

1. Heliacal rising and setting of planets. 2. Days of rising and setting. 3. Planetary elongation for rising and setting. 4. Visibility corrections. 5. Computation of rising and setting. 6. Jupiter's rising and setting. 7. Venus: Rising and setting. 8. Rising and setting of a star. 9. Canopus: Rising.

##### 19. Conjunction of Planets ... 264

1. Types of planetary conjunctions. 2. Conjunction: Principle of computation. 3. Computation of conjunction.

##### 20. Conjunction of Stars and Planets ... 271

1. Conjunction of stars and planets. 2. Principle of planet-star conjunction. 3. Occultation of stars by planets. 4. Occultation of Rohiṇī by planets. 5. Occultation of stars by the Moon. 6. Time of star-planet conjunction.

#### V. INNOVATIVE TRENDS

##### 21. Novel Innovations ... 274

1. True longitude computation on the sphere of the zodiac. 2. Computation of True Moon. 3. Simplified astronomical procedures.

#### IV. OCCULTATION

##### 16. Eclipses ... 196

1. Cause stated in the Ṛgveda. 2. Cause of the lunar eclipse. 3. Lunar eclipse: Principle of computation. 4. Lunar eclipse computation: Vāsiṣṭha and Pauliṣa. 5. —Saurasiddhānta. 6. —Āryabhaṭīya. 7. —Āryabhaṭa's Midnight system. 8. —Emendation by Brahmagupta. 9. —Bhāskara I. 10. —Lalla. 11. —Bhāskara II. 12. —Karaṇaratna. 13. —Śrīpati. 14. —Vākyakaraṇa. 15. —Grahalāghava. 16. Lunar eclipse diagram: Vāsiṣṭha Pauliṣa. 17. —Āryabhaṭa's Midnight system. 18. —Bhāskara I. 19. —Lalla. 20. —Sūryasiddhānta. 21. —Bhāskara II. 22. —Karaṇaratna. 23. Solar eclipse: Computation: Pauliṣa. 24. —Romakasiddhānta. 25. —Saurasiddhānta. 26. —Āryabhaṭa's Midnight system. 27. —Bhāskara I. 28. —Lalla. 29. —Mahāsiddhānta. 30. —Bhāskara II. 31. —Karaṇaratna. 32. —Śrīpati. 33. —Grahalāghava. 34. —Solar eclipse diagram: Romakasiddhānta. 35. —Saurasiddhānta. 36. Colour of eclipses. 37. Conditions for non-prediction of eclipses. 38. —Inscriptional references: Lunar eclipses. 38. Solar eclipses.

##### 17. Phases of the Moon ... 241

1. Periodical appearance of the Moon. 2. Moon's luminosity. 3. Conditions of Moon's visibility. 4. Preliminaries for computation. 5. Visibility corrections: Ākṣa, Āyana and the Third. 6. Rising and setting of the Moon. 7. Moon's shadow. 8. Computation of Moon's cusps. 9. Moon's cusps—diagram.

##### 18. Heliacal rising and setting of Planets and Stars ... 254

1. Heliacal rising and setting of planets. 2. Days of rising and setting. 3. Planetary elongation for rising and setting. 4. Visibility corrections. 5. Computation of rising and setting. 6. Jupiter's rising and setting. 7. Venus: Rising and setting. 8. Rising and setting of a star. 9. Canopus: Rising.

##### 19. Conjunction of Planets ... 264

1. Types of planetary conjunctions. 2. Conjunction: Principle of computation. 3. Computation of conjunction.

##### 20. Conjunction of Stars and Planets ... 271

1. Conjunction of stars and planets. 2. Principle of planet-star conjunction. 3. Occultation of stars by planets. 4. Occultation of Rohiṇī by planets. 5. Occultation of stars by the Moon. 6. Time of star-planet conjunction.

#### V. INNOVATIVE TRENDS

##### 21. Novel Innovations ... 274

1. True longitude computation on the sphere of the zodiac. 2. Computation of True Moon. 3. Simplified astronomical procedures.

#### IV. OCCULTATION

##### 16. Eclipses ... 196

1. Cause stated in the Ṛgveda. 2. Cause of the lunar eclipse. 3. Lunar eclipse: Principle of computation. 4. Lunar eclipse computation: Vāsiṣṭha and Pauliṣa. 5. —Saurasiddhānta. 6. —Āryabhaṭīya. 7. —Āryabhaṭa's Midnight system. 8. —Emendation by Brahmagupta. 9. —Bhāskara I. 10. —Lalla. 11. —Bhāskara II. 12. —Karaṇaratna. 13. —Śrīpati. 14. —Vākyakaraṇa. 15. —Grahalāghava. 16. Lunar eclipse diagram: Vāsiṣṭha Pauliṣa. 17. —Āryabhaṭa's Midnight system. 18. —Bhāskara I. 19. —Lalla. 20. —Sūryasiddhānta. 21. —Bhāskara II. 22. —Karaṇaratna. 23. Solar eclipse: Computation: Pauliṣa. 24. —Romakasiddhānta. 25. —Saurasiddhānta. 26. —Āryabhaṭa's Midnight system. 27. —Bhāskara I. 28. —Lalla. 29. —Mahāsiddhānta. 30. —Bhāskara II. 31. —Karaṇaratna. 32. —Śrīpati. 33. —Grahalāghava. 34. —Solar eclipse diagram: Romakasiddhānta. 35. —Saurasiddhānta. 36. Colour of eclipses. 37. Conditions for non-prediction of eclipses. 38. —Inscriptional references: Lunar eclipses. 38. Solar eclipses.

##### 17. Phases of the Moon ... 241

1. Periodical appearance of the Moon. 2. Moon's luminosity. 3. Conditions of Moon's visibility. 4. Preliminaries for computation. 5. Visibility corrections: Ākṣa, Āyana and the Third. 6. Rising and setting of the Moon. 7. Moon's shadow. 8. Computation of Moon's cusps. 9. Moon's cusps—diagram.

##### 18. Heliacal rising and setting of Planets and Stars ... 254

1. Heliacal rising and setting of planets. 2. Days of rising and setting. 3. Planetary elongation for rising and setting. 4. Visibility corrections. 5. Computation of rising and setting. 6. Jupiter's rising and setting. 7. Venus: Rising and setting. 8. Rising and setting of a star. 9. Canopus: Rising.

##### 19. Conjunction of Planets ... 264

1. Types of planetary conjunctions. 2. Conjunction: Principle of computation. 3. Computation of conjunction.

##### 20. Conjunction of Stars and Planets ... 271

1. Conjunction of stars and planets. 2. Principle of planet-star conjunction. 3. Occultation of stars by planets. 4. Occultation of Rohiṇī by planets. 5. Occultation of stars by the Moon. 6. Time of star-planet conjunction.

#### V. INNOVATIVE TRENDS

##### 21. Novel Innovations ... 274

1. True longitude computation on the sphere of the zodiac. 2. Computation of True Moon. 3. Simplified astronomical procedures.

#### IV. OCCULTATION

##### 16. Eclipses ... 196

1. Cause stated in the Ṛgveda. 2. Cause of the lunar eclipse. 3. Lunar eclipse: Principle of computation. 4. Lunar eclipse computation: Vāsiṣṭha and Pauliṣa. 5. —Saurasiddhānta. 6. —Āryabhaṭīya. 7. —Āryabhaṭa's Midnight system. 8. —Emendation by Brahmagupta. 9. —Bhāskara I. 10. —Lalla. 11. —Bhāskara II. 12. —Karaṇaratna. 13. —Śrīpati. 14. —Vākyakaraṇa. 15. —Grahalāghava. 16. Lunar eclipse diagram: Vāsiṣṭha Pauliṣa. 17. —Āryabhaṭa's Midnight system. 18. —Bhāskara I. 19. —Lalla. 20. —Sūryasiddhānta. 21. —Bhāskara II. 22. —Karaṇaratna. 23. Solar eclipse: Computation: Pauliṣa. 24. —Romakasiddhānta. 25. —Saurasiddhānta. 26. —Āryabhaṭa's Midnight system. 27. —Bhāskara I. 28. —Lalla. 29. —Mahāsiddhānta. 30. —Bhāskara II. 31. —Karaṇaratna. 32. —Śrīpati. 33. —Grahalāghava. 34. —Solar eclipse diagram: Romakasiddhānta. 35. —Saurasiddhānta. 36. Colour of eclipses. 37. Conditions for non-prediction of eclipses. 38. —Inscriptional references: Lunar eclipses. 38. Solar eclipses.

##### 17. Phases of the Moon ... 241

1. Periodical appearance of the Moon. 2. Moon's luminosity. 3. Conditions of Moon's visibility. 4. Preliminaries for computation. 5. Visibility corrections: Ākṣa, Āyana and the Third. 6. Rising and setting of the Moon. 7. Moon's shadow. 8. Computation of Moon's cusps. 9. Moon's cusps—diagram.

##### 18. Heliacal rising and setting of Planets and Stars ... 254

1. Heliacal rising and setting of planets. 2. Days of rising and setting. 3. Planetary elongation for rising and setting. 4. Visibility corrections. 5. Computation of rising and setting. 6. Jupiter's rising and setting. 7. Venus: Rising and setting. 8. Rising and setting of a star. 9. Canopus: Rising.

##### 19. Conjunction of Planets ... 264

1. Types of planetary conjunctions. 2. Conjunction: Principle of computation. 3. Computation of conjunction.

##### 20. Conjunction of Stars and Planets ... 271

1. Conjunction of stars and planets. 2. Principle of planet-star conjunction. 3. Occultation of stars by planets. 4. Occultation of Rohiṇī by planets. 5. Occultation of stars by the Moon. 6. Time of star-planet conjunction.

#### V. INNOVATIVE TRENDS

##### 21. Novel Innovations ... 274

1. True longitude computation on the sphere of the zodiac. 2. Computation of True Moon. 3. Simplified astronomical procedures.



#### IV. OCCULTATION

##### 16. Eclipses ... 196

1. Cause stated in the Ṛgveda. 2. Cause of the lunar eclipse. 3. Lunar eclipse: Principle of computation. 4. Lunar eclipse computation: Vāsiṣṭha and Pauliṣa. 5. —Saurasiddhānta. 6. —Āryabhaṭīya. 7. —Āryabhaṭa's Midnight system. 8. —Emendation by Brahmagupta. 9. —Bhāskara I. 10. —Lalla. 11. —Bhāskara II. 12. —Karaṇaratna. 13. —Śrīpati. 14. —Vākyakaraṇa. 15. —Grahalāghava. 16. Lunar eclipse diagram: Vāsiṣṭha Pauliṣa. 17. —Āryabhaṭa's Midnight system. 18. —Bhāskara I. 19. —Lalla. 20. —Sūryasiddhānta. 21. —Bhāskara II. 22. —Karaṇaratna. 23. Solar eclipse: Computation: Pauliṣa. 24. —Romakasiddhānta. 25. —Saurasiddhānta. 26. —Āryabhaṭa's Midnight system. 27. —Bhāskara I. 28. —Lalla. 29. —Mahāsiddhānta. 30. —Bhāskara II. 31. —Karaṇaratna. 32. —Śrīpati. 33. —Grahalāghava. 34. —Solar eclipse diagram: Romakasiddhānta. 35. —Saurasiddhānta. 36. Colour of eclipses. 37. Conditions for non-prediction of eclipses. 38. —Inscriptional references: Lunar eclipses. 38. Solar eclipses.

##### 17. Phases of the Moon ... 241

1. Periodical appearance of the Moon. 2. Moon's luminosity. 3. Conditions of Moon's visibility. 4. Preliminaries for computation. 5. Visibility corrections: Ākṣa, Āyana and the Third. 6. Rising and setting of the Moon. 7. Moon's shadow. 8. Computation of Moon's cusps. 9. Moon's cusps—diagram.

##### 18. Heliacal rising and setting of Planets and Stars ... 254

1. Heliacal rising and setting of planets. 2. Days of rising and setting. 3. Planetary elongation for rising and setting. 4. Visibility corrections. 5. Computation of rising and setting. 6. Jupiter's rising and setting. 7. Venus: Rising and setting. 8. Rising and setting of a star. 9. Canopus: Rising.

##### 19. Conjunction of Planets ... 264

1. Types of planetary conjunctions. 2. Conjunction: Principle of computation. 3. Computation of conjunction.

##### 20. Conjunction of Stars and Planets ... 271

1. Conjunction of stars and planets. 2. Principle of planet-star conjunction. 3. Occultation of stars by planets. 4. Occultation of Rohiṇī by planets. 5. Occultation of stars by the Moon. 6. Time of star-planet conjunction.

#### V. INNOVATIVE TRENDS

##### 21. Novel Innovations ... 274

1. True longitude computation on the sphere of the zodiac. 2. Computation of True Moon. 3. Simplified astronomical procedures.

#### IV. OCCULTATION

##### 16. Eclipses ... 196

1. Cause stated in the Ṛgveda. 2. Cause of the lunar eclipse. 3. Lunar eclipse: Principle of computation. 4. Lunar eclipse computation: Vāsiṣṭha and Pauliṣa. 5. —Saurasiddhānta. 6. —Āryabhaṭīya. 7. —Āryabhaṭa's Midnight system. 8. —Emendation by Brahmagupta. 9. —Bhāskara I. 10. —Lalla. 11. —Bhāskara II. 12. —Karaṇaratna. 13. —Śrīpati. 14. —Vākyakaraṇa. 15. —Grahalāghava. 16. Lunar eclipse diagram: Vāsiṣṭha Pauliṣa. 17. —Āryabhaṭa's Midnight system. 18. —Bhāskara I. 19. —Lalla. 20. —Sūryasiddhānta. 21. —Bhāskara II. 22. —Karaṇaratna. 23. Solar eclipse: Computation: Pauliṣa. 24. —Romakasiddhānta. 25. —Saurasiddhānta. 26. —Āryabhaṭa's Midnight system. 27. —Bhāskara I. 28. —Lalla. 29. —Mahāsiddhānta. 30. —Bhāskara II. 31. —Karaṇaratna. 32. —Śrīpati. 33. —Grahalāghava. 34. —Solar eclipse diagram: Romakasiddhānta. 35. —Saurasiddhānta. 36. Colour of eclipses. 37. Conditions for non-prediction of eclipses. 38. —Inscriptional references: Lunar eclipses. 38. Solar eclipses.

##### 17. Phases of the Moon ... 241

1. Periodical appearance of the Moon. 2. Moon's luminosity. 3. Conditions of Moon's visibility. 4. Preliminaries for computation. 5. Visibility corrections: Ākṣa, Āyana and the Third. 6. Rising and setting of the Moon. 7. Moon's shadow. 8. Computation of Moon's cusps. 9. Moon's cusps—diagram.

##### 18. Heliacal rising and setting of Planets and Stars ... 254

1. Heliacal rising and setting of planets. 2. Days of rising and setting. 3. Planetary elongation for rising and setting. 4. Visibility corrections. 5. Computation of rising and setting. 6. Jupiter's rising and setting. 7. Venus: Rising and setting. 8. Rising and setting of a star. 9. Canopus: Rising.

##### 19. Conjunction of Planets ... 264

1. Types of planetary conjunctions. 2. Conjunction: Principle of computation. 3. Computation of conjunction.

##### 20. Conjunction of Stars and Planets ... 271

1. Conjunction of stars and planets. 2. Principle of planet-star conjunction. 3. Occultation of stars by planets. 4. Occultation of Rohiṇī by planets. 5. Occultation of stars by the Moon. 6. Time of star-planet conjunction.

#### V. INNOVATIVE TRENDS

##### 21. Novel Innovations ... 274

1. True longitude computation on the sphere of the zodiac. 2. Computation of True Moon. 3. Simplified astronomical procedures.

#### IV. OCCULTATION

##### 16. Eclipses ... 196

1. Cause stated in the Ṛgveda. 2. Cause of the lunar eclipse. 3. Lunar eclipse: Principle of computation. 4. Lunar eclipse computation: Vāsiṣṭha and Pauliṣa. 5. —Saurasiddhānta. 6. —Āryabhaṭīya. 7. —Āryabhaṭa's Midnight system. 8. —Emendation by Brahmagupta. 9. —Bhāskara I. 10. —Lalla. 11. —Bhāskara II. 12. —Karaṇaratna. 13. —Śrīpati. 14. —Vākyakaraṇa. 15. —Grahalāghava. 16. Lunar eclipse diagram: Vāsiṣṭha Pauliṣa. 17. —Āryabhaṭa's Midnight system. 18. —Bhāskara I. 19. —Lalla. 20. —Sūryasiddhānta. 21. —Bhāskara II. 22. —Karaṇaratna. 23. Solar eclipse: Computation: Pauliṣa. 24. —Romakasiddhānta. 25. —Saurasiddhānta. 26. —Āryabhaṭa's Midnight system. 27. —Bhāskara I. 28. —Lalla. 29. —Mahāsiddhānta. 30. —Bhāskara II. 31. —Karaṇaratna. 32. —Śrīpati. 33. —Grahalāghava. 34. —Solar eclipse diagram: Romakasiddhānta. 35. —Saurasiddhānta. 36. Colour of eclipses. 37. Conditions for non-prediction of eclipses. 38. —Inscriptional references: Lunar eclipses. 38. Solar eclipses.

##### 17. Phases of the Moon ... 241

1. Periodical appearance of the Moon. 2. Moon's luminosity. 3. Conditions of Moon's visibility. 4. Preliminaries for computation. 5. Visibility corrections: Ākṣa, Āyana and the Third. 6. Rising and setting of the Moon. 7. Moon's shadow. 8. Computation of Moon's cusps. 9. Moon's cusps—diagram.

##### 18. Heliacal rising and setting of Planets and Stars ... 254

1. Heliacal rising and setting of planets. 2. Days of rising and setting. 3. Planetary elongation for rising and setting. 4. Visibility corrections. 5. Computation of rising and setting. 6. Jupiter's rising and setting. 7. Venus: Rising and setting. 8. Rising and setting of a star. 9. Canopus: Rising.

##### 19. Conjunction of Planets ... 264

1. Types of planetary conjunctions. 2. Conjunction: Principle of computation. 3. Computation of conjunction.

##### 20. Conjunction of Stars and Planets ... 271

1. Conjunction of stars and planets. 2. Principle of planet-star conjunction. 3. Occultation of stars by planets. 4. Occultation of Rohiṇī by planets. 5. Occultation of stars by the Moon. 6. Time of star-planet conjunction.

#### V. INNOVATIVE TRENDS

##### 21. Novel Innovations ... 274

1. True longitude computation on the sphere of the zodiac. 2. Computation of True Moon. 3. Simplified astronomical procedures.

#### IV. OCCULTATION

##### 16. Eclipses ... 196

1. Cause stated in the Ṛgveda. 2. Cause of the lunar eclipse. 3. Lunar eclipse: Principle of computation. 4. Lunar eclipse computation: Vāsiṣṭha and Pauliṣa. 5. —Saurasiddhānta. 6. —Āryabhaṭīya. 7. —Āryabhaṭa's Midnight system. 8. —Emendation by Brahmagupta. 9. —Bhāskara I. 10. —Lalla. 11. —Bhāskara II. 12. —Karaṇaratna. 13. —Śrīpati. 14. —Vākyakaraṇa. 15. —Grahalāghava. 16. Lunar eclipse diagram: Vāsiṣṭha Pauliṣa. 17. —Āryabhaṭa's Midnight system. 18. —Bhāskara I. 19. —Lalla. 20. —Sūryasiddhānta. 21. —Bhāskara II. 22. —Karaṇaratna. 23. Solar eclipse: Computation: Pauliṣa. 24. —Romakasiddhānta. 25. —Saurasiddhānta. 26. —Āryabhaṭa's Midnight system. 27. —Bhāskara I. 28. —Lalla. 29. —Mahāsiddhānta. 30. —Bhāskara II. 31. —Karaṇaratna. 32. —Śrīpati. 33. —Grahalāghava. 34. —Solar eclipse diagram: Romakasiddhānta. 35. —Saurasiddhānta. 36. Colour of eclipses. 37. Conditions for non-prediction of eclipses. 38. —Inscriptional references: Lunar eclipses. 38. Solar eclipses.

##### 17. Phases of the Moon ... 241

1. Periodical appearance of the Moon. 2. Moon's luminosity. 3. Conditions of Moon's visibility. 4. Preliminaries for computation. 5. Visibility corrections: Ākṣa, Āyana and the Third. 6. Rising and setting of the Moon. 7. Moon's shadow. 8. Computation of Moon's cusps. 9. Moon's cusps—diagram.

##### 18. Heliacal rising and setting of Planets and Stars ... 254

1. Heliacal rising and setting of planets. 2. Days of rising and setting. 3. Planetary elongation for rising and setting. 4. Visibility corrections. 5. Computation of rising and setting. 6. Jupiter's rising and setting. 7. Venus: Rising and setting. 8. Rising and setting of a star. 9. Canopus: Rising.

##### 19. Conjunction of Planets ... 264

1. Types of planetary conjunctions. 2. Conjunction: Principle of computation. 3. Computation of conjunction.

##### 20. Conjunction of Stars and Planets ... 271

1. Conjunction of stars and planets. 2. Principle of planet-star conjunction. 3. Occultation of stars by planets. 4. Occultation of Rohiṇī by planets. 5. Occultation of stars by the Moon. 6. Time of star-planet conjunction.

#### V. INNOVATIVE TRENDS

##### 21. Novel Innovations ... 274

1. True longitude computation on the sphere of the zodiac. 2. Computation of True Moon. 3. Simplified astronomical procedures.

#### IV. OCCULTATION

##### 16. Eclipses ... 196

1. Cause stated in the Ṛgveda. 2. Cause of the lunar eclipse. 3. Lunar eclipse: Principle of computation. 4. Lunar eclipse computation: Vāsiṣṭha and Pauliṣa. 5. —Saurasiddhānta. 6. —Āryabhaṭīya. 7. —Āryabhaṭa's Midnight system. 8. —Emendation by Brahmagupta. 9. —Bhāskara I. 10. —Lalla. 11. —Bhāskara II. 12. —Karaṇaratna. 13. —Śrīpati. 14. —Vākyakaraṇa. 15. —Grahalāghava. 16. Lunar eclipse diagram: Vāsiṣṭha Pauliṣa. 17. —Āryabhaṭa's Midnight system. 18. —Bhāskara I. 19. —Lalla. 20. —Sūryasiddhānta. 21. —Bhāskara II. 22. —Karaṇaratna. 23. Solar eclipse: Computation: Pauliṣa. 24. —Romakasiddhānta. 25. —Saurasiddhānta. 26. —Āryabhaṭa's Midnight system. 27. —Bhāskara I. 28. —Lalla. 29. —Mahāsiddhānta. 30. —Bhāskara II. 31. —Karaṇaratna. 32. —Śrīpati. 33. —Grahalāghava. 34. —Solar eclipse diagram: Romakasiddhānta. 35. —Saurasiddhānta. 36. Colour of eclipses. 37. Conditions for non-prediction of eclipses. 38. —Inscriptional references: Lunar eclipses. 38. Solar eclipses.

##### 17. Phases of the Moon ... 241

1. Periodical appearance of the Moon. 2. Moon's luminosity. 3. Conditions of Moon's visibility. 4. Preliminaries for computation. 5. Visibility corrections: Ākṣa, Āyana and the Third. 6. Rising and setting of the Moon. 7. Moon's shadow. 8. Computation of Moon's cusps. 9. Moon's cusps—diagram.

##### 18. Heliacal rising and setting of Planets and Stars ... 254

1. Heliacal rising and setting of planets. 2. Days of rising and setting. 3. Planetary elongation for rising and setting. 4. Visibility corrections. 5. Computation of rising and setting. 6. Jupiter's rising and setting. 7. Venus: Rising and setting. 8. Rising and setting of a star. 9. Canopus: Rising.

##### 19. Conjunction of Planets ... 264

1. Types of planetary conjunctions. 2. Conjunction: Principle of computation. 3. Computation of conjunction.

##### 20. Conjunction of Stars and Planets ... 271

1. Conjunction of stars and planets. 2. Principle of planet-star conjunction. 3. Occultation of stars by planets. 4. Occultation of Rohiṇī by planets. 5. Occultation of stars by the Moon. 6. Time of star-planet conjunction.

#### V. INNOVATIVE TRENDS

##### 21. Novel Innovations ... 274

1. True longitude computation on the sphere of the zodiac. 2. Computation of True Moon. 3. Simplified astronomical procedures.

#### IV. OCCULTATION

##### 16. Eclipses ... 196

1. Cause stated in the Ṛgveda. 2. Cause of the lunar eclipse. 3. Lunar eclipse: Principle of computation. 4. Lunar eclipse computation: Vāsiṣṭha and Pauliṣa. 5. —Saurasiddhānta. 6. —Āryabhaṭīya. 7. —Āryabhaṭa's Midnight system. 8. —Emendation by Brahmagupta. 9. —Bhāskara I. 10. —Lalla. 11. —Bhāskara II. 12. —Karaṇaratna. 13. —Śrīpati. 14. —Vākyakaraṇa. 15. —Grahalāghava. 16. Lunar eclipse diagram: Vāsiṣṭha Pauliṣa. 17. —Āryabhaṭa's Midnight system. 18. —Bhāskara I. 19. —Lalla. 20. —Sūryasiddhānta. 21. —Bhāskara II. 22. —Karaṇaratna. 23. Solar eclipse: Computation: Pauliṣa. 24. —Romakasiddhānta. 25. —Saurasiddhānta. 26. —Āryabhaṭa's Midnight system. 27. —Bhāskara I. 28. —Lalla. 29. —Mahāsiddhānta. 30. —Bhāskara II. 31. —Karaṇaratna. 32. —Śrīpati. 33. —Grahalāghava. 34. —Solar eclipse diagram: Romakasiddhānta. 35. —Saurasiddhānta. 36. Colour of eclipses. 37. Conditions for non-prediction of eclipses. 38. —Inscriptional references: Lunar eclipses. 38. Solar eclipses.

##### 17. Phases of the Moon ... 241

1. Periodical appearance of the Moon. 2. Moon's luminosity. 3. Conditions of Moon's visibility. 4. Preliminaries for computation. 5. Visibility corrections: Ākṣa, Āyana and the Third. 6. Rising and setting of the Moon. 7. Moon's shadow. 8. Computation of Moon's cusps. 9. Moon's cusps—diagram.

##### 18. Heliacal rising and setting of Planets and Stars ... 254

1. Heliacal rising and setting of planets. 2. Days of rising and setting. 3. Planetary elongation for rising and setting. 4. Visibility corrections. 5. Computation of rising and setting. 6. Jupiter's rising and setting. 7. Venus: Rising and setting. 8. Rising and setting of a star. 9. Canopus: Rising.

##### 19. Conjunction of Planets ... 264

1. Types of planetary conjunctions. 2. Conjunction: Principle of computation. 3. Computation of conjunction.

##### 20. Conjunction of Stars and Planets ... 271

1. Conjunction of stars and planets. 2. Principle of planet-star conjunction. 3. Occultation of stars by planets. 4. Occultation of Rohiṇī by planets. 5. Occultation of stars by the Moon. 6. Time of star-planet conjunction.

#### V. INNOVATIVE TRENDS

##### 21. Novel Innovations ... 274

1. True longitude computation on the sphere of the zodiac. 2. Computation of True Moon. 3. Simplified astronomical procedures.

#### IV. OCCULTATION

##### 16. Eclipses ... 196

1. Cause stated in the Ṛgveda. 2. Cause of the lunar eclipse. 3. Lunar eclipse: Principle of computation. 4. Lunar eclipse computation: Vāsiṣṭha and Pauliṣa. 5. —Saurasiddhānta. 6. —Āryabhaṭīya. 7. —Āryabhaṭa's Midnight system. 8. —Emendation by Brahmagupta. 9. —Bhāskara I. 10. —Lalla. 11. —Bhāskara II. 12. —Karaṇaratna. 13. —Śrīpati. 14. —Vākyakaraṇa. 15. —Grahalāghava. 16. Lunar eclipse diagram: Vāsiṣṭha Pauliṣa. 17. —Āryabhaṭa's Midnight system. 18. —Bhāskara I. 19. —Lalla. 20. —Sūryasiddhānta. 21. —Bhāskara II. 22. —Karaṇaratna. 23. Solar eclipse: Computation: Pauliṣa. 24. —Romakasiddhānta. 25. —Saurasiddhānta. 26. —Āryabhaṭa's Midnight system. 27. —Bhāskara I. 28. —Lalla. 29. —Mahāsiddhānta. 30. —Bhāskara II. 31. —Karaṇaratna. 32. —Śrīpati. 33. —Grahalāghava. 34. —Solar eclipse diagram: Romakasiddhānta. 35. —Saurasiddhānta. 36. Colour of eclipses. 37. Conditions for non-prediction of eclipses. 38. —Inscriptional references: Lunar eclipses. 38. Solar eclipses.

##### 17. Phases of the Moon ... 241

1. Periodical appearance of the Moon. 2. Moon's luminosity. 3. Conditions of Moon's visibility. 4. Preliminaries for computation. 5. Visibility corrections: Ākṣa, Āyana and the Third. 6. Rising and setting of the Moon. 7. Moon's shadow. 8. Computation of Moon's cusps. 9. Moon's cusps—diagram.

##### 18. Heliacal rising and setting of Planets and Stars ... 254

1. Heliacal rising and setting of planets. 2. Days of rising and setting. 3. Planetary elongation for rising and setting. 4. Visibility corrections. 5. Computation of rising and setting. 6. Jupiter's rising and setting. 7. Venus: Rising and setting. 8. Rising and setting of a star. 9. Canopus: Rising.

##### 19. Conjunction of Planets ... 264

1. Types of planetary conjunctions. 2. Conjunction: Principle of computation. 3. Computation of conjunction.

##### 20. Conjunction of Stars and Planets ... 271

1. Conjunction of stars and planets. 2. Principle of planet-star conjunction. 3. Occultation of stars by planets. 4. Occultation of Rohiṇī by planets. 5. Occultation of stars by the Moon. 6. Time of star-planet conjunction.

#### V. INNOVATIVE TRENDS

##### 21. Novel Innovations ... 274

1. True longitude computation on the sphere of the zodiac. 2. Computation of True Moon. 3. Simplified astronomical procedures.

IN nearly 3000 verses extracted from a large number of original texts on Indian astronomy, and presented with English translation, notes and tables, this publication attempts to provide a scientific insight into the main characteristics of Indian astronomy, the methodologies evolved, instruments used, mathematically developed computation procedures and the innovative trends as well as the rationale associated with them. Several of the passages throw light on the importance attached to continued observation and the concern for accuracy of the traditional Indian astronomer, which would set at rest the general view that Indian astronomy has been, by and large, speculative and empirical. The material presented in this *Source-book* would possibly lead to fresh attempts towards a comparative and critical appreciation of Indian astronomy in relation to those of the other culture-areas.

Dr. B.V. SUBBARAYAPPA, (b. 1925), M.Sc. (Chem.), Ph.D. (History of Science), is Director of the Centre for History and Philosophy of Science, Indian Institute of World Culture, Bangalore. Well versed in Sanskrit, his special studies for over 25 years have been devoted to the history and philosophy of science, particularly of India. He was formerly Executive Secretary, Indian National Science Academy and Member-Secretary of the National Commission for History of Science in India.

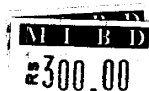
He has published over 70 papers on history of science, science and society and related subjects. His other publications include: *A Concise History of Science in India* (Jt. Ed. and author of five chapters), the *Rasārṇavakalpa* (Jt. author), *Science and Society in Soviet Central Asia*, *Scientific and Technical Exchanges between Soviet Central Asia and India in the Medieval Period* (Ed.), *Science in India: A Changing Profile* (Jt. Ed.).

He is an elected Member of the Executive Council of the International Union of History and Philosophy of Science and a Corresponding-Member of the International Academy of History of Science, Paris.

Professor K.V. SARMA, (b. 1919), B.Sc., M.A. (Sanskrit), D.Litt. (History of Astronomy), former Director of the well-known Vishveshvaranand Institute of Sanskrit and Indological Studies, Hoshiarpur (Panjab), is now Hon. Professor, Adyar Library and Research Centre, Madras.

He has critically edited or translated over 50 texts, on Indian astronomy mainly produced in Kerala, based on original manuscripts. Amongst them special mention might be made of *Ḍṛggaṇita*, *Grahacārāṇibandhana*, *Tantrasaṅgraha*, *Sphuṭanirṇaya*, *Goladīpika*, *Rāśigolasphuṭanīti*, *Candra-sphuṭāpti*, *Gaṇitayuktayaḥ* and *Jyotirmimamsa*. He has published over 50 research papers on the subject and a *History of the Kerala School of Hindu Astronomy*.

He served as a Member of the National Commission for the History of Sciences in India and continues as a Member of its Advisory Committee (Ancient Period).





IN nearly 3000 verses extracted from a large number of original texts on Indian astronomy, and presented with English translation, notes and tables, this publication attempts to provide a scientific insight into the main characteristics of Indian astronomy, the methodologies evolved, instruments used, mathematically developed computation procedures and the innovative trends as well as the rationale associated with them. Several of the passages throw light on the importance attached to continued observation and the concern for accuracy of the traditional Indian astronomer, which would set at rest the general view that Indian astronomy has been, by and large, speculative and empirical. The material presented in this *Source-book* would possibly lead to fresh attempts towards a comparative and critical appreciation of Indian astronomy in relation to those of the other culture-areas.

Dr. B.V. SUBBARAYAPPA, (b. 1925), M.Sc. (Chem.), Ph.D. (History of Science), is Director of the Centre for History and Philosophy of Science, Indian Institute of World Culture, Bangalore. Well versed in Sanskrit, his special studies for over 25 years have been devoted to the history and philosophy of science, particularly of India. He was formerly Executive Secretary, Indian National Science Academy and Member-Secretary of the National Commission for History of Science in India.

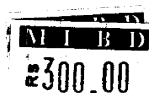
He has published over 70 papers on history of science, science and society and related subjects. His other publications include: *A Concise History of Science in India* (Jt. Ed. and author of five chapters), the *Rasārṇavakalpa* (Jt. author), *Science and Society in Soviet Central Asia*, *Scientific and Technical Exchanges between Soviet Central Asia and India in the Medieval Period* (Ed.), *Science in India: A Changing Profile* (Jt. Ed.).

He is an elected Member of the Executive Council of the International Union of History and Philosophy of Science and a Corresponding-Member of the International Academy of History of Science, Paris.

Professor K.V. SARMA, (b. 1919), B.Sc., M.A. (Sanskrit), D.Litt. (History of Astronomy), former Director of the well-known Vishveshvaranand Institute of Sanskrit and Indological Studies, Hoshiarpur (Panjab), is now Hon. Professor, Adyar Library and Research Centre, Madras.

He has critically edited or translated over 50 texts, on Indian astronomy mainly produced in Kerala, based on original manuscripts. Amongst them special mention might be made of *Ḍṛggaṇita*, *Grahacārāṇibandhana*, *Tantrasaṅgraha*, *Sphuṭanirṇaya*, *Goladīpika*, *Rāśigolasphuṭanīti*, *Candra-sphuṭāpti*, *Gaṇitayuktayaḥ* and *Jyotirmimamsa*. He has published over 50 research papers on the subject and a *History of the Kerala School of Hindu Astronomy*.

He served as a Member of the National Commission for the History of Sciences in India and continues as a Member of its Advisory Committee (Ancient Period).



IN nearly 3000 verses extracted from a large number of original texts on Indian astronomy, and presented with English translation, notes and tables, this publication attempts to provide a scientific insight into the main characteristics of Indian astronomy, the methodologies evolved, instruments used, mathematically developed computation procedures and the innovative trends as well as the rationale associated with them. Several of the passages throw light on the importance attached to continued observation and the concern for accuracy of the traditional Indian astronomer, which would set at rest the general view that Indian astronomy has been, by and large, speculative and empirical. The material presented in this *Source-book* would possibly lead to fresh attempts towards a comparative and critical appreciation of Indian astronomy in relation to those of the other culture-areas.

Dr. B.V. SUBBARAYAPPA, (b. 1925), M.Sc. (Chem.), Ph.D. (History of Science), is Director of the Centre for History and Philosophy of Science, Indian Institute of World Culture, Bangalore. Well versed in Sanskrit, his special studies for over 25 years have been devoted to the history and philosophy of science, particularly of India. He was formerly Executive Secretary, Indian National Science Academy and Member-Secretary of the National Commission for History of Science in India.

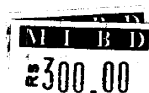
He has published over 70 papers on history of science, science and society and related subjects. His other publications include: *A Concise History of Science in India* (Jt. Ed. and author of five chapters), the *Rasārṇavakalpa* (Jt. author), *Science and Society in Soviet Central Asia*, *Scientific and Technical Exchanges between Soviet Central Asia and India in the Medieval Period* (Ed.), *Science in India: A Changing Profile* (Jt. Ed.).

He is an elected Member of the Executive Council of the International Union of History and Philosophy of Science and a Corresponding-Member of the International Academy of History of Science, Paris.

Professor K.V. SARMA, (b. 1919), B.Sc., M.A. (Sanskrit), D.Litt. (History of Astronomy), former Director of the well-known Vishveshvaranand Institute of Sanskrit and Indological Studies, Hoshiarpur (Panjab), is now Hon. Professor, Adyar Library and Research Centre, Madras.

He has critically edited or translated over 50 texts, on Indian astronomy mainly produced in Kerala, based on original manuscripts. Amongst them special mention might be made of *Ḍṛggaṇita*, *Grahacārāṇibandhana*, *Tantrasaṅgraha*, *Sphuṭanirṇaya*, *Goladīpika*, *Rāśigolasphuṭanīti*, *Candra-sphuṭāpti*, *Gaṇitayuktayaḥ* and *Jyotirmimamsa*. He has published over 50 research papers on the subject and a *History of the Kerala School of Hindu Astronomy*.

He served as a Member of the National Commission for the History of Sciences in India and continues as a Member of its Advisory Committee (Ancient Period).



IN nearly 3000 verses extracted from a large number of original texts on Indian astronomy, and presented with English translation, notes and tables, this publication attempts to provide a scientific insight into the main characteristics of Indian astronomy, the methodologies evolved, instruments used, mathematically developed computation procedures and the innovative trends as well as the rationale associated with them. Several of the passages throw light on the importance attached to continued observation and the concern for accuracy of the traditional Indian astronomer, which would set at rest the general view that Indian astronomy has been, by and large, speculative and empirical. The material presented in this *Source-book* would possibly lead to fresh attempts towards a comparative and critical appreciation of Indian astronomy in relation to those of the other culture-areas.

Dr. B.V. SUBBARAYAPPA, (b. 1925), M.Sc. (Chem.), Ph.D. (History of Science), is Director of the Centre for History and Philosophy of Science, Indian Institute of World Culture, Bangalore. Well versed in Sanskrit, his special studies for over 25 years have been devoted to the history and philosophy of science, particularly of India. He was formerly Executive Secretary, Indian National Science Academy and Member-Secretary of the National Commission for History of Science in India.

He has published over 70 papers on history of science, science and society and related subjects. His other publications include: *A Concise History of Science in India* (Jt. Ed. and author of five chapters), the *Rasārṇavakalpa* (Jt. author), *Science and Society in Soviet Central Asia*, *Scientific and Technical Exchanges between Soviet Central Asia and India in the Medieval Period* (Ed.), *Science in India: A Changing Profile* (Jt. Ed.).

He is an elected Member of the Executive Council of the International Union of History and Philosophy of Science and a Corresponding-Member of the International Academy of History of Science, Paris.

Professor K.V. SARMA, (b. 1919), B.Sc., M.A. (Sanskrit), D.Litt. (History of Astronomy), former Director of the well-known Vishveshvaranand Institute of Sanskrit and Indological Studies, Hoshiarpur (Panjab), is now Hon. Professor, Adyar Library and Research Centre, Madras.

He has critically edited or translated over 50 texts, on Indian astronomy mainly produced in Kerala, based on original manuscripts. Amongst them special mention might be made of *Ḍṛggaṇita*, *Grahacārāṇibandhana*, *Tantrasaṅgraha*, *Sphuṭanirṇaya*, *Goladīpika*, *Rāśigolasphuṭanīti*, *Candra-sphuṭāpti*, *Gaṇitayuktayaḥ* and *Jyotirmimamsa*. He has published over 50 research papers on the subject and a *History of the Kerala School of Hindu Astronomy*.

He served as a Member of the National Commission for the History of Sciences in India and continues as a Member of its Advisory Committee (Ancient Period).

